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ADDRESS ALL COMMUNICATIONS TO
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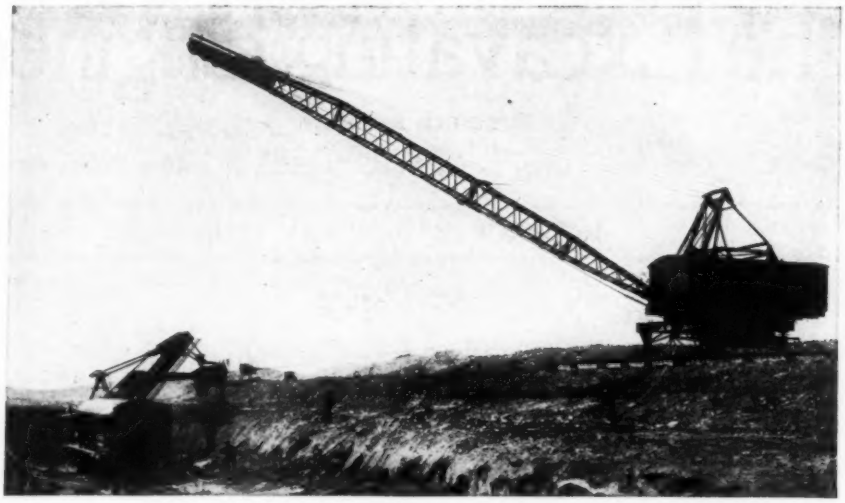

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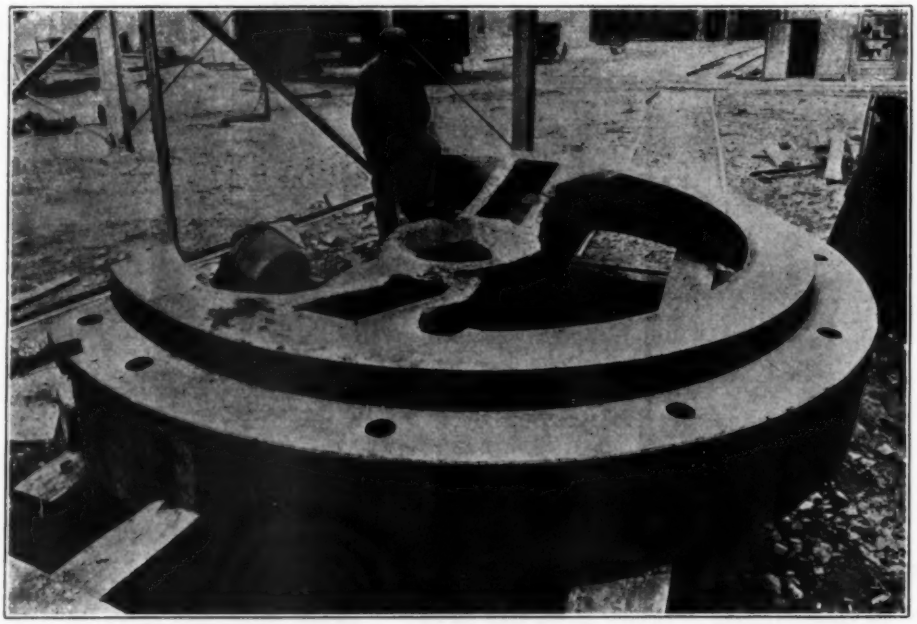

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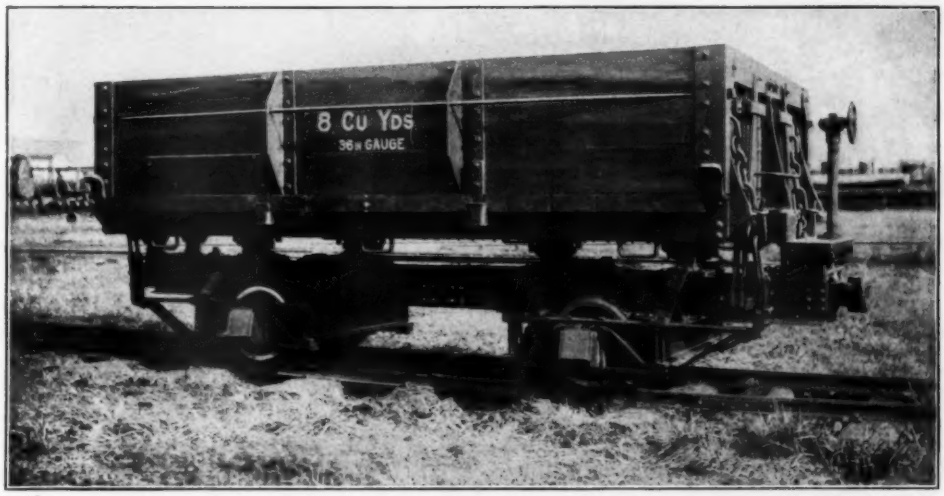

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Cutting them down to *one-fifth* or less of what they have been! How? With TROY TRAILERS, of course!

Mr. Robert W. Davis, County Engineer and Road Superintendent of Fayette County, Ky., (Lexington), made an address the other day before the Kentucky Highway Engineers in session at Louisville.

He mentioned the well-known fact that the ton-mile cost with teams has been established at between 20 cents and 30 cents.

Mr. Davis cited a certain typical day when the material hauled would have demanded fifteen teams costing $52.50. The truck-trailer train did it for $8.73. Not an exceptional—no! a typical day!

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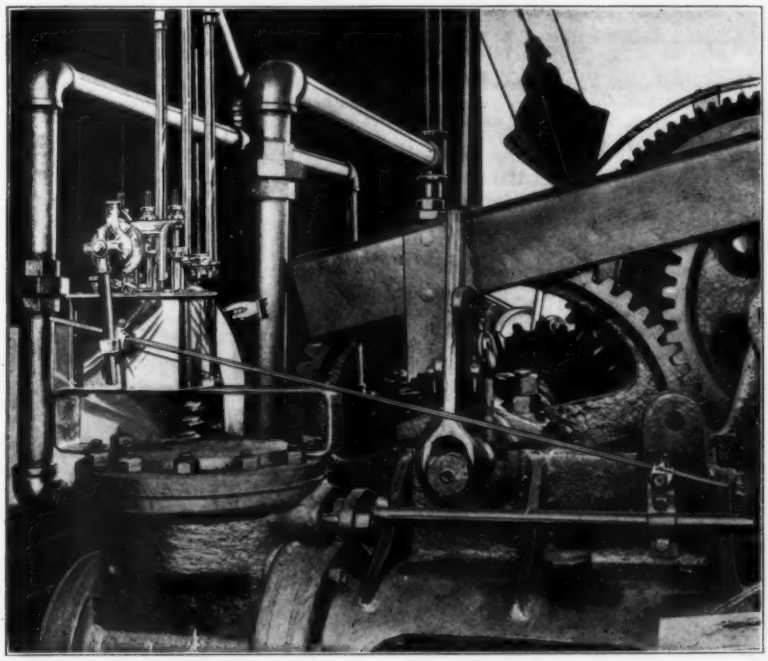

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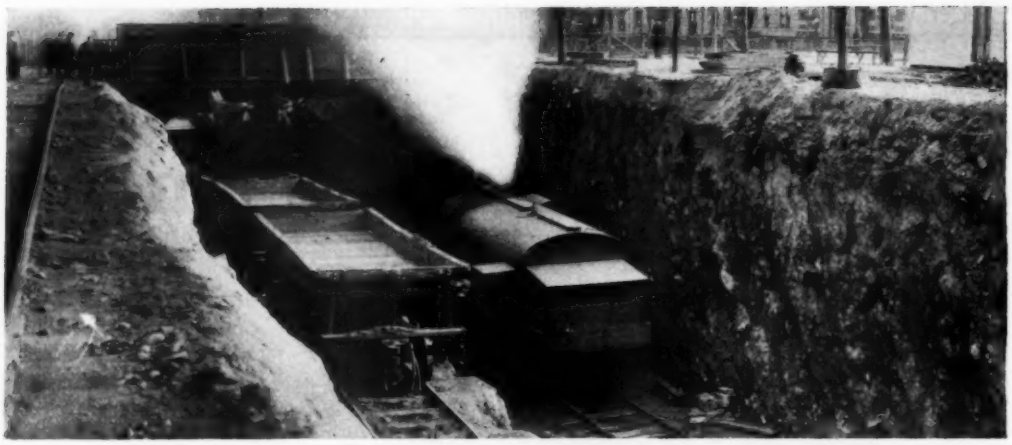


Fig. 1.—Starting to cut under Rogers Avenue Bridge. An Atlantic class-35 loading 12-yard Western Cars. In order to leave the bridge undisturbed, the shovel moved in, took a dipperful, backed out and dumped. This operation was found to be 50% cheaper than hand work.

Fig. 2—Taking 92% of the material in cross-section with a class-14 Bucyrus dragline. Note hard character of material. This cut is about 60 feet deep. When a locomotive was not present the cars were spotted by a hoisting engine, which in this view is hidden by the dragline excavator.

The Excavating Engineer

Vol. 12 JANUARY, 1916 No. 4

Excavation on Section 12 Interborough Rapid Transit Subway, Brooklyn

Method Employed by the Inter-Continental Construction Corporation for handling the excavation—Railroad type and revolving shovels, a dragline excavator and a locomotive crane used—Locomotives of special design.

The Contract

SECTION twelve of the Interborough Rapid Transit Subway in Brooklyn is being handled by the Inter-Continental Construction Corporation of New York. This contract includes the excavation, concrete and steel construction and incidental work along Eastern Parkway from New York Avenue to Prospect Park Plaza, a distance of about 6,600 feet, calling for 650,000 cubic yards of excavation, 100,000 cubic yards of concrete work and 13,000 tons of structural steel construction.

The excavation runs from 43 to 66 feet in depth and from 30 feet to 104 feet in width. The subway is to be double-decked and double-tracked, widening and flattening out to a four-track single level at the stations.

This section meets Rogers & Hagerty's contract on the north and Crawford Construction Company's work on the south. On either side of Nostrand Avenue a Y is being constructed to the east to connect with a branch subway where Newman & Carey have a contract.

Problems of Operation

The method of operation differs from the usual subway construction in New York, due to the fact that the open character of the right-of-way does away with underpinning and underground work and makes possible comparatively free shovel work. Difficulties are encountered in the necessity of handling the hard material here existing, without the assistance of explosives, because of exceedingly high insurance rates, and in the problems of cutting under cross streets where traffic must not be disturbed. For instance on Nostrand Avenue, street cars pass every half minute during the rush hours. This necessitates careful, and at times, much interrupted operation of dirt trains.

Shovel Operation

Excavation was started south of Bedford Avenue on July 6th, 1915, when an 18-B Bucyrus revolving shovel was cut in. This shovel worked in conjunction with twenty 5-yard Pierce-Arrow motor trucks operated by the Ames Contracting Co. These trucks had a 2½-mile haul, delivering the material to scows. On the lower cuts, the trucks were hauled out of the trench on a 20 per cent grade by an American Hoist & Derrick Company's hoisting engine. Under these conditions, the shovel handled 450 cubic yards per 8-hour shift. Figure No. 5 shows a part of the runway up which the trucks were hauled.

Figure No. 1 shows an Atlantic type class-35 shovel equipped with a 1¾-yard dipper working towards Rogers Avenue bridge. This shovel is loading 12-yard Western cars. It is operating 10 feet below the loading track. The method of cutting under this street is interesting. The shovel moves down a slight grade underneath the bridge, takes a dipperfull, backs out and loads it in a car. This operation may at first sight appear slow, but an output of 200 cubic yards a day is obtained which is 50 per cent quicker and cheaper than hand work. The Atlantic was cut in about October 15th.

Dragline Work

A most unusual method of operation is under way on the north end of the work. This may be seen in Figures Nos. 2 and 3. A class-14, 2-yard Bucyrus dragline excavator is doing the excavation. This machine backs up on the work, taking out the material as it proceeds, depositing it into dump cars.

The material, as stated, is extremely hard, consisting of glacial drift, hardpan and boulders. The dragline is taking out 92 per cent of the material in the cross-section. It is followed by a gang con-

Fig. 3.—Looking from Rogers Avenue towards Nostrand Avenue. Dragline in background. First cut already taken by Atlantic shovel. Note row of trees along dump track to left. This makes it necessary to put diverters on locomotive stacks.

Fig. 4.—Timbering and sheeting operations following dragline. An Ohio crane taking out loose material from bottom of excavation. Rogers & Hagerty's contract joins the Inter-Continental work here.

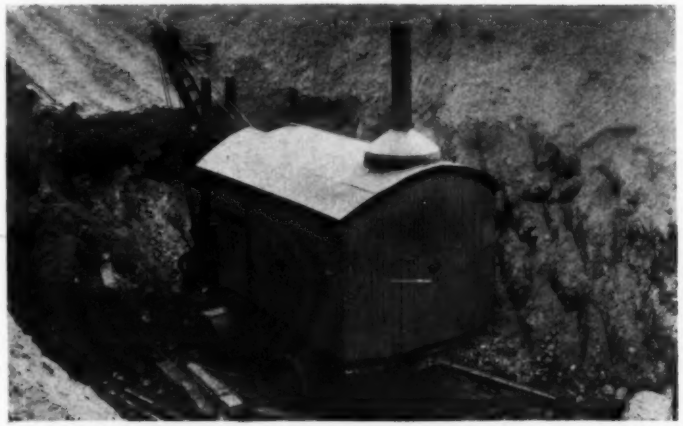


Fig. 5.—18-B, ¾-yard Bucyrus in heavy material. Part of the run-way shown was used for hauling motor trucks out when 18-B was taking first cut.

Fig. 6.—One of the three 40-ton, 14 by 22-inch American locomotives, showing diverter on stack. Mr. Chas. Rees, superintendent, standing beside locomotive.

sisting of eight men and a foreman, who pick down the remaining material allowing it to fall into the bottom of the trench. A sheeting gang consisting of a pile hammer foreman and three assistants, place the sheeting and bracing. This gang is followed by a 20-ton Ohio crane with a 45-foot boom and a clam-shell bucket which picks up the loose material and deposits it into cars.

The cars at the dragline are spotted by a Lidgerwood hoisting engine. This engine is hidden behind the dragline in Figure No. 2.

Handling the Spoil

The excavated material is handled by a first class standard-gauge equipment consisting of three 40-ton locomotives of special design built by the American Locomotive Company, and forty-one 12-yard Western air-dump cars.

The cars are hauled about a half mile in 5 to 6-car trains up a 3⅛ per cent grade which necessitates two locomotives. They are then delivered to the Brooklyn Rapid Transit Company and are hauled by motors to the dump at the old Brighton Race Track, about seven miles away.

The Locomotives

The locomotives above mentioned were built by the American Locomotive Company after a special design. They are all of the same size, 14 x 22 inch, 40-ton, 4-wheel, saddle-tank type. They are equipped complete with the same accessories found on modern passenger locomotives, including automatic and straight air, and Leach sanders.

The parkway is lined with a row of trees under which the dump trains must pass. In order to avoid possible damage to these trees due to the exhaust gases, a diverter has been devised which is placed on the stacks. This device effectively diverts the exhaust away from the trees.

Safety Provisions

The contractors are making every provision for safety. Four flagmen are employed on the crossings, two at Bedford, one at Rogers and one at Nostrand Avenue. In addition to this, hinged derailers are placed on the contruction track on both sides of every crossing to prevent accidents caused by run-aways or carelessness. These derailers are thrown clear when the trains pass and are then locked again in position.

It is estimated that the excavation will require from 14 to 18 months to complete from the time the first shovel was cut in. The contract will be completed in about two years.

A New Method of Stripping Iron Ore on the Mesabe Range

A large revolving shovel is being used successfully by Butler Brothers at Mace No. 2 mine at Nashwauk, Minn.

FOR the first time, the method of stripping the overburden from coal deposits by the use of a large revolving shovel, a method which has proved such an unqualified success in the Kansas district and elsewhere, has been applied on the Iron Range. It is a little too early to attempt to compare costs of operation with any degree of accuracy, but it is beyond doubt that the outcome of this experiment, if it may be called such, has been most satisfactory to the contractors. Butler Brothers, who were the first to use heavy shovel equipment of the standard railway type on the Range, are employing the new method on their Mace No. 2 mine at Nashwauk, Minn.

The shovel is a 225-B Bucyrus, weighing about 320 tons in working condition. It is equipped with an 80-foot boom and a dipper handle 58 feet in length, allowing it to cut a level floor 128 feet in width and reach 61 feet in height measuring from the open dipper door. Its general features of design have been described many times before in our pages and are familiar to our readers.

The total stripping at Mace No. 2 will amount to between 550,000 and 600,000 cubic yards. The shovel is cutting swaths measuring about 110 feet bottom width in an overburden averaging 35 feet in depth with a slope of about 1 to 1, making a top width of approximately 180 feet. It is loading 20-yard Western air-dump cars placed upon the bank, as may be seen in our illustration. These cars are hauled in trains of three cars each to the dump about a third of a mile away.

The material is good digging. It is composed of a sandy loam capped with two or three feet of roots and vegetable matter, as the property at one time was wooded ground.

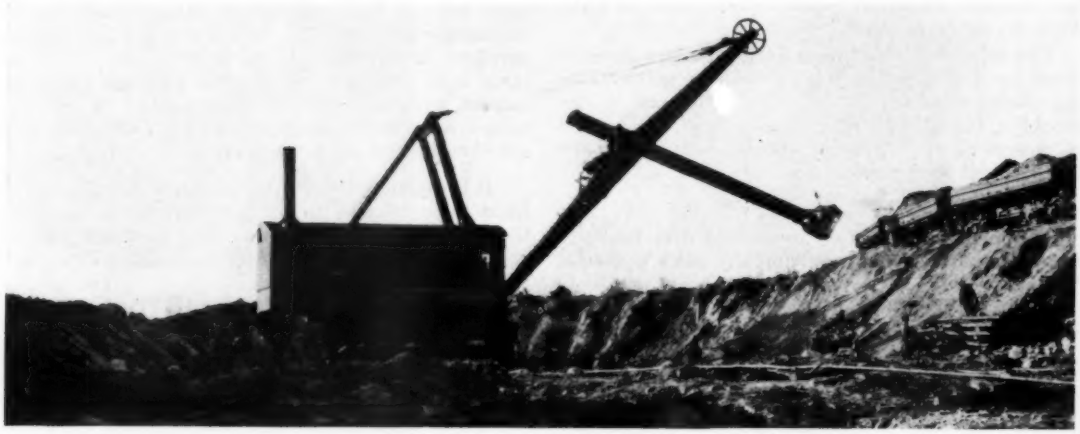
The first thing that strikes one accustomed to the familiar stripping operations so long successfully practiced upon the Range, is the absence of the usual large force of laborers on the job. The shovel is taking the entire depth of the stripping in one cut. This is possible because of the great digging and dumping reach. This naturally eliminates a large track gang and makes it worth while to lay the dump train track with greater care as it is not necessary to shift as frequently. The shovel, furthermore, moves up but once in 6 or 7 hours. The entire shovel operation is managed by four men on the shovel, namely, an engineer, a cranesman, a fireman and an oiler, and two pitmen.

tached to these boxes in such a manner that they may be thrown over the shovel's dipper lip. In this manner the box can be lifted from the dump car and placed in the cut with very little delay or trouble.

It is safe to assume that there are other properties on the iron ranges whose physical characteristics are such as to adapt them to this method of operation. Butler Brothers have undoubtedly led the way again to a revolution in stripping methods in this district.

An Addition to Bucyrus Sales Organization

The Bucyrus Company has recently appointed



Butler Brothers' "Moose", a 225-B 320-ton Bucyrus, stripping Mace No. 2 mine at Nashwauk, Minn. This is the first big revolving shovel to be used on the Iron Range.

As stated above, it is too early to give figures comparing this method of operation with former methods, but the completeness of its success may be judged from the fact that Butler Brothers have recently ordered a duplicate machine from the Bucyrus Company for stripping a new mine at Wakefield, Michigan.

Butler Brothers are to be congratulated upon the efficient manner with which they have planned the layout and organization, as a new proposition naturally brings to light many problems. One interesting problem was evolving a simple method of bringing coal to the shovel. At first an incline was erected from the cars on the bank to the shovel. This method, however, has been discarded in favor of a simpler one. The coal is placed in big boxes holding about two tons each which are brought up to the job on the dump cars. Wire cables are at-

Messrs. Sykes & Coffin to represent them in the sale of small revolving shovels in Ohio. Their principal offices are at 701 Huntington Bank Building, Columbus, Ohio and they have branches in the principal cities of the state.

We received the following note this morning from Mike Conroy, but he gives no address:

"I am starting a new camp and want to get a well dug the worst way. Can you send me a good man to dig it at once, as I must have it finished before I move camp?"

Now, Mike, if you had asked us to send you a man to dig a well the best way we would have been stuck, but we can send you a man that can dig a well the worst way. He dug a well last fall for a friend of ours and dug it so crooked he fell out of it.—*Question Mark Dept. Steam Shovel & Dredge Journal.*

Little Robert—Ma, was Robinson Crusoe an acrobat?

Mother—I don't know. Why?

Little Robert—Well, here it reads that after he had finished his day's work he sat down on his chest.—*Judge.*

A Unique Home-Made Coal Stripping Shovel

Much has been published in these pages describing the wonderful developments in coal stripping effected by the evolution of the big coal stripping shovel. Those who are familiar with the rapid progress which has been made in this type of shovel will undoubtedly be interested in a remarkable machine now in operation near Worland, Mo., particularly as this shovel is home-made, the product of the genius of one man.

The shovel, which is illustrated herewith, is operated by Summers Brothers & Mullies in a field about a quarter of a mile south of the Madison Branch of the Missouri Pacific Ry. about two miles west of Worland, Mo. just over the line in Kansas.

It was built some years ago by one of the Mr. Summers', who at present is the runner, president of the company, pit-boss, general superintendent, and general handyman.

General View of Stripping

The field is of rather indefinite acreage, as it has never been drilled to any extent. The shovel is at present digging in about 14 feet of shale and earth, and is handling in the neighborhood of 400 to 500 cubic yards per day. It is working in the box cut, where the overburden is from a few feet to about sixteen feet deep. The shovel is modeled after a standard railroad shovel, and therefore the dirt is wasted on both sides of the pit, making it necessary to dig about half of the dirt twice on the next cut. The pit is 30 feet to 40 feet wide, and the coal 28 inches to 30 inches thick.

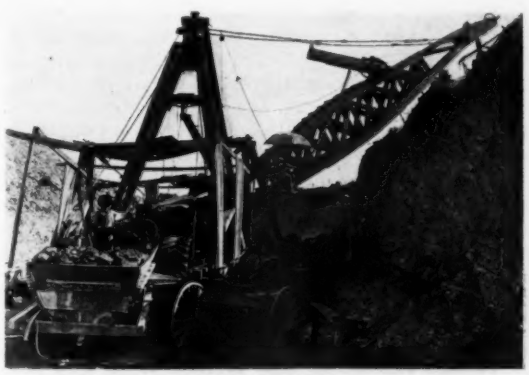
The coal is broken out with wedges and loaded by hand into wagons, when it is hauled to the railroad switch. The output is about three cars, or from 200 tons to 250 tons per week.

The pit is self-draining and is in remarkably good shape as the walls stand and the shovel does a good job of cleaning the coal.

Front View of Shovel

The photographs illustrate well the construction of the shovel. The boom is 50 feet long and is made almost entirely of one inch boards. The whole machine is run by the traction engine through a clever arrangement of sheaves and friction drives. Four men are necessary to operate it—two runners, a cranesman and a fireman. The cranesman's sole duty is to pull the latch on the dipper, which holds about one yard. To move ahead the blocks are taken from under the large beam in front and the machine is propelled by means of friction drives.

Mr. Summers formerly was a railroad engineer, and his only experience with a shovel was to see one work. He started in with an old traction engine, a few ropes, an old sheave or two, the tools a mechanic might be expected to have, and the determination to have a steam shovel. The shovel was built on the ground—though on another tract than the present one—with the help of some of his neighbors.



Rear View of Shovel, Showing Traction Engine

Stripping a Stone Quarry with a Revolving Shovel

A story of how the East St. Louis Stone Company moved a 25-ton revolving shovel to their quarry situated on the top of a cliff 120 feet above the surrounding country, and a further account of how the stripping operations are being conducted.

THE Quarry of the East St. Louis Stone Company of East St. Louis, Illinois, is located in Centerville Township, St. Clair County, near the City of East St. Louis, in a limestone bluff which rises above the surrounding country and bottoms about 140 feet, and consists of about 80 feet of stone, with from 40 to 60 feet overburden and clay strippings.

The problem which confronted Ralph E. McLean, the manager of the company, when he determined

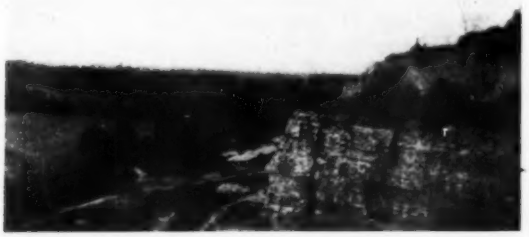


Fig. 1—A general view of the site of the quarry showing the 18-B Bucyrus shovel starting in on the stripping at the top of the bluff. This is about 120 feet above the spot where the shovel was erected. This was just behind the blacksmith shop shown in the foreground.

to strip this quarry with a revolving shovel, was how best to take this machine this distance up into the air in the shortest time and with the least amount of trouble. The manner in which this problem was solved will be described herein.

The steam shovel, a Bucyrus 18-B equipped with a ⅞ cubic yard dipper, arrived at the plant about April 15th of this year. It was unloaded and erected by Ed. Lueick, the engineer, assisted by his fireman, Frank Wilson. The erection took place at a point just behind the blacksmith shop shown in the left foreground of Figure No. 1.

For about a month before the actual work of stripping was begun, the shovel was used for cutting new tracks and making a fill in order to raise the present side tracks, the object being to afford additional storage and side track facilities. The material obtained from the new side track excavation was shipped to East St. Louis for filling purposes.

During the spring and summer there was considerable wet weather in this vicinity which added considerably to the difficulty of the problem of taking the shovel to the top of the cliff. Before the actual assent was started the shovel was moved over a comparatively level road for a distance of somewhat over 2000 feet. The length of the incline was about 350 feet which consisted of a grade of from 35 to 40 per cent which is shown quite graphically in Figure No. 2. It was necessary to take the shovel up about 100 feet before it was considered safe. The assent was started at 6:30 A. M. Thirty minutes were allowed at noon for lunch and it was landed at the top at about 7:00 P. M. The total operation took about twelve hours actual time.

The method of tracking and blocking the shovel is shown in Figure No. 3. 2-inch by 12-inch planks were laid crosswise on the hill. The wheels traveled on 4 by 12-inch 5-foot timbers. 10 by 12-inch blocks were used underneath the back wheels in order to give the rear of the shovel a slight elevation while climbing.

Fig. 2—The shovel climbing the hill under her own steam. This grade was between 35 and 40 per cent.

Fig. 3—The method of blocking the shovel and of attaching the blocks. It will be noticed that the hoisting line runs from the sheave at the point of the boom to the sheave made fast to the front frame of the shovel. Ed. Lueick, the engineer, is standing on the shovel and C. O. Dorr, quarry foreman, on the ground.

The shovel went up under her own steam, in other words, she pulled herself up the hill. A 1⅛-inch cable was made fast at the top of the hill and was attached to a set of triple blocks as shown in Figure No. 3. Another set of triple blocks was attached to the frame of the shovel as shown, and a ⅞-inch line ran through these blocks to a sheave attached to the front sill of the shovel, from where it ran over the sheave at the point of the boom and back to the hoisting drum. Another heavy line was made fast directly to the frame of the shovel and was carried up the hill to a set of triple blocks, which were in turn connected with a horse-operated winch shown in Figure No. 4. In making the assent the shovel was blocked 12 times while the cable on the blocks was overhauled. While this was being done with one set of blocks, the weight was carried on the other set. 10-inch by 12-inch blocks were used behind the rear wheels and on top of 10″ x 12″ x 5 ft, blocks when the shovel was at rest during the operation of over-hauling.

The ends of the 10 by 12 inch blocks were hollowed out so as to fit the face of the wheel coming down to a sharp thin edge at the bottom. This allowed the shovel to roll on to them easily. It will thus be seen that as the weight of the shovel is on the forward ends of these blocks, this arrangement acts to prevent the blocks from slipping.

When the assent had been made, the shovel had to travel along the top of the cliff about 2,000 feet in the direction in which it came up. The road was very rough crooked and hilly. They were compelled in some places to cut their way through, taking out side hills and casting the material over on the other side in order to make a road to travel over. On two occasions it was necessary to make a right angle turn with a lead of only about 10 feet. In doing so the shovel was turned by lifting the weight off one pair of wheels with the aid of the dipper handle and slueing the shovel around.

When the chosen point was reached the shovel cut its way into the proposed pit working down grade towards the face of the bluff just over the clay shoot shown in Figure 5 and Fig. 1. This cut was made in order to provide suitable track arrangements In making the first cut it was necessary to cast the material on either side where it was picked up later on another cut. Figure No. 6 shows how this material was wasted.

The clay which was obtained from stripping the pit, was loaded into two-yard Koppel cars built by the Orenstein-Arthur Koppel Company of Pittsburgh. These cars were hauled by mules and the material dumped into the shoot shown in Figure No. 5. When work was first started, the track for these cars was about 30 or 35 feet above the top of the shoot. This track was gradually lowered as the

Fig. 4—The winch used in assisting the shovel up the hill.

Fig. 5—The clay shoot from the stripping pit to the railroad cars.

Fig. 6—18-B Bucyrus shovel loading two-yard Koppel cars. It will be seen in this view how it was necessary to cast the material on either side when making the first cut.

Fig. 7—The pit operations with the single track arrangement.

Fig. 8—During the early operations it was only possible to load two cars at a time. This photograph shows this operation.

bed of stone was approached, by means of the stripping operations. The shoot as shown, carried the material into standard railroad cars for shipment. After the first cut was made and a track laid as shown in Figure No. 7, the shovel loaded two cars at a time (see Figure No. 8), but it was obliged to wait for them to be returned from the dump. This track arrangement was impossible when the second cut was started as shown in Figure No. 9. A switch was then put in, making it possible to handle two trains of two cars each. With this arrangement 500 yards was handled per day.

The material was easy to handle, being a sandy clay and the dipper filled while the material was heaping up. The dipper carried about 1⅛-yard or better per load. The operation of the plant is under the personal supervision of Mr. McLean. C. O. Door is foreman in charge of the quarry operations with supervision over the stripping plant. Ed. Lueick is in sole charge of the stripping operations besides operating the shovel. We are indebted to Mr. McLean for the above information.

Fig. 9—Starting the second cut. This view shows the side track arrangement which made it possible to handle two trains of two cars each.

Revolving Shovel Work on the Norwegian State Railway

Construction work on the new line across the Dovre Mountains—Three 18-B Bucyrus shovels in use.

THE Dovrebanen is a standard-gauge railroad now under construction across the high and rugged Dovre Mountains in Norway. This line forms the main link in the new standard-gauge railroad between the capital city, Kristiania, in southern Norway and Trondhjem about 140 miles due north, as the crow flies, the third largest city in the country. Unlike the usual practice in that country, this road is being constructed with 90-pound rails in order to adapt it to speeds up to 60 miles per hour.

German 24" gauge locomotive and "tip-wagons" at the dump.

Grading the site of the Marienborg repair shops near Trondhjeim, Norway. A Bucyrus 18- shovel loading German "tip-wagons" on about one cubic yard capacity. These cars are spotted by hand as there is but one locomotive in attendence. The shovel is in a 16-foot bank of heavy clay.

In purchasing these shovels, the small revolving type was decided upon because of the rough and mountainous character of the country and the consequent difficulty in moving about.

Three 18-B, ⅞-yard, Bucyrus shovels are being used. Two have been in operation on railroad construction proper and one on station work.

One machine has been at work at Fokstuen, about 10 miles from the southern starting point of the Dovrebanen.

The work it has been doing is a long, shallow cut. The material encountered was boulders closely packed together with sand and smaller stones. The digging has been extremely hard but the engineers

report that it has been handled without difficulty. The long haul and transportation difficulties have prevented high output. Two 24-inch gauge locomotives with two trains of nine 2½ cubic yard cars each have been used. On account of the high altitude, work has to be closed down for about four months during the year. The shovel has been working above the tree line.

Another shovel has been in use at the northern end of the road near Storen Station. This section is approaching completion and balasting and rail laying has been in progress. The shovel has been used for loading crushed stone for ballast, and has done very satisfactory work, keeping well ahead of the transportation facilities. This machine was furnished with a 1¼ cubic yard dipper as an extra, but the standard ⅞-yard dipper has been found to have sufficient capacity up to the present.

The third shovel has been at Marienborg, just outside the city of Tondhjem where large railroad repair shops are under construction. The shovel has been used for grading the site. Our views show this work in progress. Only one locomotive with two trains of cars has been in use. This naturally has not been productive of high yardage. Furthermore, wet weather has caused much trouble at the dump. The photographs give a good idea of the character of the work.

TRADE NOTES

The Troy Wagon Works Company of Troy, Miami County, Ohio, advise that they have made the following important sales recently:

Tennessee Power Co., Rock Island, 5 1½-ton Troy Trailers.
City of St. Paul Minn., 1 5-ton Troy Trailer.
Department of Public Works
Hendee Co., Springfield, Mass., 1 1½-ton Troy Trailer.
Cadillac Motor Co., Detroit, Mich., 1 1½-ton Troy Trailer.
Swift & Co., Chicago, Ill., 1 1½-ton Troy Trailer.
Montgomery County, Montgomery, Ala., 16 Troy Reversible Wagons.

The second National Conference on concrete road building will be held in Chicago on February 16th, 17th and 18th. Seventeen sub-committees have been named in order to investigate and submit reports on the construction of concrete roads. Dr. W. F. M. Goss, Dean of the College of Engineering of the University of Illinois has been elected chairman, and J. P. Beck, secretary. A cordial invitation is extended to all interested in highway improvements, to correspond with the secretary at 208 So. La Salle St., Chicago.

The Annual Convention for 1916 of this Association will be held in Chicago February 17 and 18, during the week of the Cement Show. A program of unusual interest is being prepared covering different topics of importance relative to the manufacture and sale of concrete sewer pipe and drain tile.

Among the speakers will be Hon. A. O. Eberhart, Ex-Governor of Minnesota.

W. L. Sullivan has resigned his position as president and general manager of the Pittsburg Machinery Company, Pittsburg, Kansas, has sold his stock in this company, and is now in business for himself at 105 East 7th Street, Pittsburg, Kansas. The new company has a convenient and well located stock room half way between the Stilwell Hotel and the Post Office. The repair stock of the Bucyrus Company, the English Iron Works Company, Allis-Chalmers Mfg. Company, Fairbanks-Morse & Company and a number of other well-known manufacturers has been taken with them. The new company will also carry a complete line of heavy machinery and supplies. They advise that they will be in a better position than ever to furnish supplies of all kinds to the coal-stripping field. Mr. W. A. Thomas who has been with the Pittsburg Machinery Company for the past two years in charge of steam shovel repairs, has associated himself with the new company.

Frank H. Bailie, Assistant Manager of Sales of the H. K. Porter Company of Pittsburgh, died on December the 14th after a brief illness from pneumonia. Mr. Bailie was associated with the H. K. Porter Company for twenty-seven years and is well known in the construction field.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review in this column such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Excavating Engineer Publishing Company at the prices named.

"DOUBLE QUICK" TRENCH FILLER, Bulletin No. 58 of the Waterloo Cement Machinery Corporation describing and illustrating in detail the operation and construction of this machine which is not only adapted to back filling work, but to light hoisting, hauling overground, loading and unloading, sewers covering telephone and electric light and power conduits, pulling aerial underground cables, etc.
Waterloo Cement Machinery Corp.,
Waterloo, Iowa.

BUCKING BLUE GUMBO—This is the title of a 3½ by 6¼ inch folder recently issued by this company. It contains a description of notable Kilbourne & Jacobs dump car performances and deals with the experience on the Welland Canal.
The Kilbourne & Jacobs Mfg. Co.,
Columbus, Ohio.

SULLIVAN AIR COMPRESSORS—No. 115-3½ inch by 5½ inch, 32 pages and cover, containing descriptions, illustrations, specifications and tables, covering the various sizes of compressors built by this company. Sullivan Machinery Co.,
122 So. Michigan Ave.,
Chicago, Ill.

LOCOMOTIVES FOR EXPORT, Record Number 82—6 by 9 inches, 32 pages and cover. An illustrated catalogue describing various types of locomotives built by the above company for use in foreign countries.
The Baldwin Locomotive Works,
Philadelphia, Pa.

THE WONDER PAVER—8 x 10½, 8 pages, illustrated, this bulletin containing a thorough description and specifications of the Wonder Paver.
Waterloo Cement Machinery Corp.,
Waterloo, Iowa

The Excavating Engineer

A Monthly Publication Devoted to Excavating *and* Allied Subjects

Subscriptions, payable in advance, $1.00 a year for 12 numbers, 50 cents for six months.

To foreign countries, including postage, $1.00 or its equivalent, 4 shillings; 4 marks; or 5 francs.

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Advertising copy should reach Milwaukee Office by 10th of month before date of issue.

Address all communications to the company.

THE EXCAVATING ENGINEER PUBLISHING CO.

Bradlee Van Brunt, Manager and Editor

267 National Avenue Milwaukee, Wis., U. S.

A Warning

It seems hardly necessary to tell our readers that the condition in the steel market at the present time is extremely serious. There has been an unprecedented foreign demand for steel products of all descriptions. This demand is due not only to war orders, but to the fact that foreign production for industrial and commerical purposes has been practically cut off. Within the last two months this has resulted in an unprecedented condition in steel mills the country over. It would not require much of an investigation to prove that there are very few mills which are not sold out far into the future. Deliveries are getting longer every day, and prices are rising rapidly. This condition is already being reflected among the manufacturers of contractors' equipment. To protect themselves from this rise in prices they, themselves, have been obliged to make a marked increase in their price lists. This increase is bound to continue unless conditions change materially which does not seem likely at the present time. Many manufacturers are already quoting April and May delivery on standard equipment.

There is but one answer to this for the contractor. If he will require equipment for work during the spring or early summer, he should buy now and thus protect himself, not only on price, but on delivery. This is a situation which is serious and which must be met by prompt action.

Construction Outlook

Along with the alarming conditions which we have just mentioned, encouraging reports float in from all over the country relative to the pick up in business. The earnings of the railroads have shown a marked improvement. There has been reported the greatest bank clearings in the history of the country. The export figures have attained another high level. Developments have emphasized to a remarkable degree, the fundamental soundness of our financial condition. Our tremendous exports have caused a great conjestion of freight on the Eastern lines. In fact all the roads out of Chicago have recently declared an embargo on freight intended for foreign shipment. Authorities seem to feel that this will before long call for improved facilities and eventually much new construction. Our sound financial condition, mentioned above, is reflected very strongly in the railroad investment market. An example of this is the successful underwriting of the Baltimore & Ohio long-term bond issue which was subscribed four times over. This marks a distinct step towards more secure financing and indicates that the railroads will not have to depend upon the dangerous expedient of borrowing on short-time loans. This will without doubt make possible much needed construction improvements.

New railroad projects are still in evidence, in fact more than is usual for this time of the year. There has been a very natural let-up in road construction due to the winter season. The Secretary of the Interior has approved a $9,200,000 appropriation for completing unfinished irrigation projects.

In his annual report made public on December 18th, Secretary of the Interior Lane, sounded several notes which will be of interest to contractors. He expresses his conviction that no other policies which the government might undertake should be allowed to stay the internal development of the country. He emphasizes the great need for a general development bill which will make possible the mining of phosphate rock and other minerals much needed at the present time, but undeveloped on account of inadequate laws. He believes it to be most important that the government should continue its sympathetic co-operation in the development of Alaska, and speaks with much force about the magnitude of the work which must be done in tameing our rivers and reclaiming deserts. He expresses his conviction that the funds required will be so staggering that it will be necessary for the Government to advance credit. He emphasizes the need of a commission to devise the ways and means by which the states and private land owners and the National Government can co-operate in paying for the work to be done.

UMI

Smashing World's Re

The panorama shown above and the photo[graph] show vividly the condition of the slides on [the] middle of November. The view in the lo[wer] October near Gold Hill, the big hill shown in [the] noted from this view, how the mud has be[en] the canal by the pressure of the slides. Sl[ide] had been shot off in the barrier and the water [is] of these slides can be seen easily on the rig[ht] appearance is characteristic. The dipper d[red]ge three Bucyrus dipper dredges, the Cascad[as] ground may be seen the elevator dredge [Cu]lebra material from the Corozal is being hauled in [cars] be seen in this view. This dredge pumps it [over] used to sluce down the material so that it [can] slucing may be seen clearly in the lower le[ft] Bucyrus dredges are making are very remarkable. they have outstripped any previous records [which] In the month of November in 22½ working [days] Engineers are confident that the 300,000 yard [mark] The weekly record is also held by this dredge, [for] the first week in December. The daily record [also] is held by the Paraiso. This dredge dug 1720 [cubic] during this time an hour and a half. It is [said] Bucyrus dipper dredges during the first week [in] of the excavation from the base of the slides. [This] The monthly record of the Cascadas was made [in] first seven days of which it only worked half [time] be attributed to a great extent to the splendid [work]

s Records at Panama

e photograph in the lower left-hand corner of this page des on the Panama Canal as they existed about the the lower right-hand corner was taken the 26th of own in the middle of the panorama view. It will be as been moved our of the water from the bottom of es. Shortly before this picture was taken, a blast e water can be seen rushing through. The character the right-hand side of the panorama. The terraced pper dredges reading from left to right are the Cascadas, Gamboa and the Paraiso. In the back- edge Canal, and hydraulic dredge No. 85. The uled in rows to suction dredge No. 86 which can not aps it over the hills. Suction dredge No. 85 is being t it can be handled by the Corozal. This hydraulic ower left-hand view. The records which the three remarkable. In fact it is not too much to say that cords which have ever been made by dipper dredges. rking days, the Cascadas dug 296,280 cubic yards. 000 yard mark will be beaten in a very short time. is dredge, being 89,315 which was handled during ly record up to the last information which we have dug 17,280 cubic yards in 24 hours being delayed It is rather remarkable to observe that the three st week in December handled between 87 and 88% slides. This percentage is climbing week by week. was made during its first month of operation. The rked half time. The excellence of these records can splendid spirit of the crews.

UNDERWOOD & UNDERWOOD

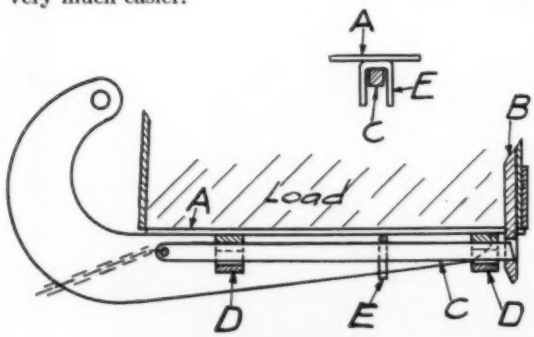
UMI

· FIELD NOTES ·

QUESTIONS pertaining to the operation, maintenance or repair of excavating machinery will be answered through this column. Address, Field Note Department, Excavating Engineer, P. O. Box 607, Milwaukee, Wisconsin.

A Simple Method of Making a Dipper Latch Work Easily

It occasionally happens because of any one of a number of reasons, that the dipper latch on a steam shovel sticks and will not work without a little difficulty. We give below a kink which has been suggested to us by F. A. Crabb of Vandalia, N. Y., who has used this device with great success on some older type Bucyrus and Vulcan shovels which he has been operating. It will be seen from the sketch which we publish herewith that the weight of the load on the dipper door, bears upon the underside of the latch keeper, upon the upper side of the outside bracket and the upper side of the inside bracket. A very simple and inexpensive way to do away with the latch bar sticking is to take a piece of round iron either ¾-inch or ⅞-inch in diameter, whichever fits best, bend it to a three sided piece as shown by E on the top sketch, slip this roller in between the latch bar guides as shown in the lower sketch. It will be seen that this piece of round iron acts as a roller. Mr. Crabb tells us that it makes the dipper dump very much easier.



A—Dipper Door.
B—Latch Bar Keeper.
C—Latch Bar.
D—Guides or Brackets.
E—The Roller.

Clean Boiler Water Secured from Muddy Streams with Well-Points

Boiler water difficulties, says the Engineering Record, were acute on the dredges of the California Development Company, which owns and maintains the main canals of the system supplying the Imperial Valley, in southern California and the northern part of lower California, until the superintendent of the river division, H. M. Rouse, hit upon the plan of using a well-point. Previously various devices had been used, the most satisfactory being a large settling tank on each dredge, in which a boiler compound was used, to counteract the slight alkalinity of the water. These tanks, however, were difficult to clean, and at best gave an unsatisfactory water.

The plan hit upon and now used exclusively on the company's fleet of dredges is to jet down a 3-in. well-point, inside of which is the 1-in. jetting pipe. One of these points is hung from a spud-frame of each dredge, and can be jetted down in a few minutes wherever the dredge is working, and pulled as easily for moving. The pipe is jetted down into the channel bed itself, taking care that the screen is well below the channel bed. Thus advantage is taken of the natural filtering action of the stream bed material. When the point is down to proper depth the feed pump, whose suction is attached to the well-point by a hose, is started, delivering directly to the boiler.

A Correction

In the November number of the Excavating Engineer we printed an article contributed by Mr. V. A. Loomis in which he describes a method of reeving the hoisting chain for hoisting the boom. In this description we stated that he suggested the use of 90 feet of 1¼-inch cable for this purpose. Mr. Loomis tells us that he prefers to use 1¼-inch or 1½-inch rope. He says that while the cable might work nearly as well it probably would be harder to make the wraps and hitches than would be the case of the rope, owing to the stiffness of a cable of this size.

Blasting Hints

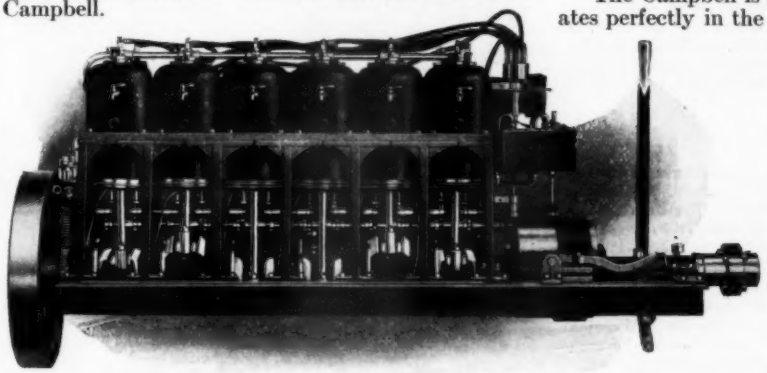
Don't Spring Holes in Rapid Succession.

Springing holes in rapid succession is dangerous, sufficient time should always be allowed to elapse between successive spring shots and between the last springing shot and the final loading. This will allow the rock to cool. It is a good plan to wait over night after the last springing shot before the charge is finally loaded. Watch the loading gang closely in order to detect whether they are carrying matches in their overalls, pockets or hat bands. Many accidents have happened from matches accidentally falling into the hole when the men stoop over. —*Du Pont Magazine.*

DEVICES YOU OUGHT · TO KNOW ABOUT ·

The 1916 Campbell Four-Cycle Marine Motor

In marine engineering circles the Campbell four-cycle marine motor is recognized as a standard of utility, efficiency and economy. It contains no theoretical novelties and combines all that is best in gasoline motor construction. In the Campbell is combined every feature which characterizes all modern gasoline motors for use in water craft or automobiles. Features which have since become standard in motor construction were first brought out in the Campbell.



Cross-Section of Campbell Four-Cycle Marine Motor

The production of a motor that will stand up under hard usage, give full power as needed, that can be readily adjusted in its most vital parts, has been the result of years of close study of every class of motor in active operation and the adaptation of every point that would make for better service.

The perfection of steel-making processes has rendered obsolete the clumsy and heavily constructed motor.

The scientific distribution of weight and the use of steel of high tensile strength in the frame of the Campbell affords three times the strength of the old-style enclosed base at one-third or one-half the weight. In this way an engine is offered that will appeal to the motorboat owner on account of its lightness, speed and power; and to the man who requires the so-called heavy-duty type for working purposes, on account of its strength and rigidity, its sustained power on low speeds and the fact that it is unnecessary to carry around an enormous weight of cast-iron of no particular value.

The Campbell has many superior features not found in any other motor, among which is the open base construction which permits easy access to every working part of the engine. This allows the operator to keep his engine in perfect running order, and obviates the necessity of unseating and overhauling to assure himself that every part is performing perfectly.

The construction of this motor also prevents overheating of running parts, as a current of air passes through the engine, carrying away heat from the cylinders.

The Campbell is simple inconstruction and operates perfectly in the hands of the novice, as well as appealing to the most experienced engineer, on account of its sweet running qualities and simplicity.

Illustrated literature covering all sizes will be forwarded on application to the manufacturers, Campbell Motor Mfg. Co., Minneapolis, Minnesota.

A New Trailer

A trailer that can be hitched to any light truck or touring car has recently been put on the market by the Troy Wagon Works Company. This trailer, which is known as their Model No. 58, is illustrated herewith. It need hardly be mentioned here what a splendid field there undoubtedly is for a trailer of this type, especially one that is sturdily constructed and well designed. This trailer lists for $125.00. It has a carrying capacity of 1,250 pounds and weighs approximately 500 pounds. Full information and specifications may be obtained by writing the Troy Wagon Works Company, Troy, Miami Co., Ohio.

Model No. 58 Troy Trailer for use Behind Light Truck or Touring Car

SHOTS FROM THE · FIRING LINE ·

Alaska

Seward—Daniel S. Daxon advises us that he has been erecting a 45-C Bucyrus shovel here which has recently been shipped from the Panama Canal.

Arizona

Yuma—John Mulligan was the lowest bidder and was awarded the contract for improving county highway contract No. 3, a portion of the Yuma-Phoenix road, at 14.9c cu. yd. for 33,696 cu. yds. unclassified excavation and 39.9c cu. yd. for 10,000 surfacing with 4-in. to 8-in. cementing road gravel or crushed rock. Rock to be furnished by the county. Other bids were:—J. H. Maxey, 20c excavating and 40c surfacing; A. E. MacBeath, 19.8c excavating and 49½c surfacing; A. J. Griffin, 17c excavating and 74c surfacing; Geo. W. Norton, 60c excavating and 49½c surfacing.

Arkansas

Osceola—L. T. Osborn representing the Arkansas Construction Co., of Little Rock, awarded the contract at $184,495, to build the Osceola-Little-River concrete road. The road is to be 28 miles long and will cost approximately $280,000, the cement, stone, sand and gravel being furnished by the district. Pride & Fairley are the engineers.

Mountain Home—The Ozark Valley Ry. has awarded contract for construction of the proposed line from Rothville to Mountain Home, Ark., 10 miles, to the Blodgett Construction Co., Kansas City, Mo. K. V. Loba, Mountain Home, is president.

Yellville—Yellville-Rush & Mineral Belt Ry. Co. has been incorporated with a capital stock of $140,000, and proposes a 19-mile road through Yell County. It is reported that work will be started by January 1. The Line will tap a rich mineral section. J. C. Shepard, Rush, is president.

Marion—The Board of Commissioners of Drainage District No. 7 of Crittenden County has sold an issue of $205,000 of bonds to the Mississippi Valley Trust Co. and Francis Bros. of St. Louis. An area of 40,000 acres will be drained by the district, and included in the work will be 50 miles of canals varying in width from 12 to 44 ft. The work is to be done within the next six months. The lowest bidder for the work was Fedr. C. Morgan of Indianapolis, Ind., at $0.0741 per cu. yd. The Northern Construction Co. of Elkhart, Ind., bid $0.0742 per cu. yd. The engineering work will be handled by the Morgan Engineering Co. of Memphis, Tenn.

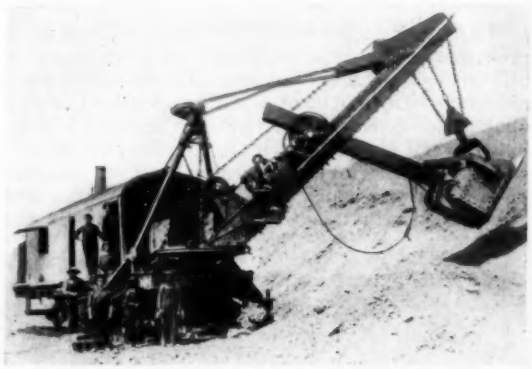
California

San Francisco and Vicinity

By E. C. Hingston

O. Ruff dropped in to see us from the Alkali State where he was craning a Bucyrus 95-C, Jack Brightwell, engineer, at Ruth, Nevada for the Nevada Cons. Copper Co. At present they are working six Bucyrus shovels and have three in reserve. Indications are that they will soon be all in operation as things are looking up.

S. R. Fox of Oakland has been awarded contract for digging the supply canal for the Byron-Bethany Irrigation Co. from the San Joaquin River to their pumping plant which comprises from 80,000 to 100,000 cu. yds. of earth excavation. He is now engaged in moving his dragline onto the work.



Above photograph is Chadwick & Sykes 60-C steam shovel over casting into San Francisco Bay. This work is in connection with the extension of the Santa Fe Ry. to the Richmond Pressed Brick Company's plant near Richmond, Cal. The excavation has been going on since last July and they expect to complete it by January 1st. E. J. Monihan, engineer, Will Casey, cranesman, Max Wolfe, fireman. We are indebted to Mr. Monihan for this photograph.

Los Angeles and Vicinity

By G. H. Hutchinson

Hank Reibell is in town, has been running Bucyrus shovel No. 563, for Robert Scherer & Company, for the past ten months.

Case Sweet, Ted Krantz, Johnny Miller and Steve Hogan are working for Lee Moore at Gallup, New Mexico.

Jack Sullivan, Mike Melroy and Ernie Loyd are operating a 45 Bucyrus for the Kern County Land Company, at Woodford, California.

Joe Labell, engineer, Jeff Hughes and Ralph Brown cranesman, and Al. Schroeder, fireman, are awaiting a call to duty.

Buck Thurman, Joe Ecksley are operating a 40 Marion for the City of Los Angeles, at Haiwee, California.

Jack Cunningham and Jim Kennedy are running the Bucyrus shovel No. 563 for Robert Scherer at Athens, California.

George Brown and Blonde Runquist are at Corona for the Temescal Rock Company.

Jimmie Westbrooke has quit the shovel game. He has procured a city license and is engineer in the City Fire Department of Los Angeles.

Harry Quincy is operating an 18-B Bucyrus at the County Hospital, in the City of Los Angeles.

Harry Hudson, contractor, has leased his 18-B Bucyrus shovel to the City of Los Angeles, excavating at the county hospital.

Lee Moore, contractor, who has just finished up a successful highway job in California, has moved his 60-C Bucyrus and

model-40 Marion to Gallup, New Mexico, where he has the subcontract from Sharp and Fellows, who are doing some work for the Sante Fe. We understand they are changing the channel of the river at that point, for the purpose of furnishing additional yard room, which necessitates handling about 160,000 yards of material about one-half to be removed with steam shovels.

C. E. Black has a contract for a considerable yardage from the Ventura County and at the present time is operating a 41 Marion, in charge of E. J. Robichaux, shovel engineer.

To date their progress has been slow on this contract, on account of running into some hard material.

Better progress is looked for.

San Francisco—San Francisco board of public works this week awarded to F. Rolandi of that city the contract for constructing a 67-mile railroad from Rosasco eastward to the Hetch-Hetchy water project in Tuolumne county. The road is to be used for transporting materials for the municipal water works construction. The contract price is $1,543,080.74. Work is to be completed in ten months, but will not be started until sufficient bonds are sold. Mr. Rolandi is a general engineering contractor and has done some state highway work.

Alameda—People's Water Co. has awarded the contract for raising two miles of levees on San Leandro Bay to Van Sant-Houghton Co., 503 Market Street, San Francisco. About 70,000 cubic yards of material will be moved by dredging. This work is to prevent overflow from interfering with the use of the Fitchburg wells of the water company.

Manteca—Bids will be received until 10 a. m., January 3, by South San Joaquin Irrigation District, for construction of Dams 2, 3 and 4, Woodward reservoir. The work includes preparation of site requiring 15,000 cubic yards of excavation, Dam No. 2 fill, requiring 523,000 cubic yards of excavation and Dams 3 and 4, 22,000 cubic yards. Estimated cost $163,300 At the opening of bids on December 6, Ross Construction Co., Sacramento, Cal., at $180,160 was low bidder. The specifications are now modified to extend the time for completion under certain conditions and will encourage the use of a hydraulic suction dredge for making the fills. A Griffin is engineer.

Sacramento—Fred Hoffman of Long Beach at $72.089, low bidder for the construction of a state highway in Imperial County, Division 7, Route 12, Section C. Pipe railing for culverts, reinforcing steel corrugated metal pipe and Portland cement to cost about $43,892, will be furnished by the state.

Los Angeles—Contractors and shovel men in all parts of the country will grieve to hear that Donald A. McIntosh, head of the firm of McIntosh Brothers, one of the largest and best known railroad contractors in America, died on December the 19th in Los Angeles. McIntosh Brothers have for a generation, been building railroads throughout the country particularly in the West. Their latest and perhaps their largest achievement was a thousand miles of railroad on the Pacific Coast extension of the Chicago, Milwaukee & St. Paul. Although the home of Mr. McIntosh was in Milwaukee, he has spent much of his time lately in Los Angeles because of ill health. Two months ago while in Milwaukee, he had a stroke of paralysis and was brought to Los Angeles in hope that the change in climate might benefit him. Although Mr. McIntosh was seventy-two years old, he has taken and active interest in the work of his company up to and within the last few months.

San Diego—State engineer W. F. McClure has reported that water-supply for proposed Cardiff irrigation district is inadequate and project will be abandoned.

Canada

Winnipeg Notes

By J. A. Coyle

J. G. Sullivan, chief engineer, C. P. Ry., has recently returned from a trip of inspection over Kettle River. Mr. Sullivan experienced very severe weatner during period of inspection.

Messrs. Phelan & Shirley were guests at the Fort Garry. Both these gentlemen are looking well despite their long absence from the northern ozone.

Grant Smith is visiting Winnipeg for a few days. Mr. Smith's company had considerable work on Kettle River Valley Railway, in which C. P. R. is mainly interested.

F. P. Brady in charge at Winnipeg for Government Railways, states their line east has been able to handle with despatch heavy grain movement beyond its exceeding the most optimistic anticipation. Considerable improvement on the line is anticipated in 1916, by addition of extra equipment.

Montreal and Vicinity

By R. St. John

Some people, other than subscribers, will benefit by the Canadian Government accepting the $50,000,000, oversubscribed to their $50,000,000 war loan as the Government Railway seems to have a little money now for they are asking for tenders on new equipment.

Laurentine Power Co., Ltd. recently incorporated in Montreal with $10,500,000 capital stock, plans to construct and operate light heat and power plants.

Important schemes for the further development of Montreal Harbor are now under consideration by the International Waterways Commission.

A contract has been awarded by the Department of Railways and Canals to Jones, Girouard & Company, Limited, Plaza Building, Ottawa, for the erection of eight bridges on the main line of the Intercolonial Railway, Sydney Sub-division.

The Board of Control Montreal has adopted a report asking for the provision of $1,022,320 for sewers to be laid in all parts of the city. In addition, it is the city's intention to go forward with the large collecting sewer in the north of the Island, for which plans are nearly complete, estimates being that the actual sewer, minus the purification plant and the site, will cost about $500,000.

Notes from Vancouver

It is announced that the Canadian Northern Pacific Railway is to resume construction work on the Vancouver Island sections of the system, and that before the close of the year a section of the west coast line will be completed to tide water. Temporary terminal facilities will be constructed on the Songhees Indian Reserve. The line to Patricia Bay, which is completely graded, with culverts and bridges ready for track laying, will also be completed without delay.

The projected railway from Athabasca to Fort Vermilion on the Peace River has been completely surveyed this season, and reports are now being completed. Construction has commenced on steamers and terminals for a ferry line between Peace River Crossing and Fort Vermilion. Tramways are under construction at Smith Rapids and Vermilion chutes. At the latter point boring operations for gas and oil are under way and it is reported that the indications are very satisfactory. The D. A. Thomas' interests, which are behind the railway, claim that they have in the north one of the world's greatest potash beds.

Hugh Walken, resident engineer for the Canadian Pacific Railway at Nelson, B. C., for the past year, has been transferred to the staff of the division engineer at Vancouver. His position at Nelson is now being filled by H. C. Barber, formerly in charge of tunnelling operations at Roger's Pass.

J. W. Stewart, president of the Pacific Great Eastern Railway, has returned from Europe, and the question of expediting further construction work is being dealt with. Some extensive bridge and track work in the vicinity of Clinton is at present under way.

A. R. Clucas, who has been on the engineering staff of the city of North Vancouver for several years, has been appointed acting city engineer to replace Mr. A. M. West, formerly city engineer, who has enlisted for active service.

A proposal to reclaim some 30,000 acres of exceedingly fertile land in the Sumas Lake district at a cost of less than $1,500,000 is being urged by the Sumas Dyking Commissioners. R. H. S. Creswell, Dyking Commissioner.

Duncan R. Campbell has been appointed superintendent of the Pacific Division of the Canadian Northern Railway, with headquarters at Vancouver.

B. T. Chappell, formerly superintendent of the Canadian Northern Railway at Saskatoon, has recently been appointed superintendent at Kamloops, B. C.

An agreement has been reached whereby the Canadian Northern Pacific Railway has acquired running rights into Vancouver over the Great Northern Railway Company's line. The former railway will also have tempory use of the latter's freight sheds until its own sheds have been completed. As a result of the agreement the first Canadian Northern Railway train ran into Vancouver recently.

The Great Northern Railway has completed a $60,000 bridge across the North Fork canyon into the Granby Smelter. The C. P. R. completed a $100,000 bridge over the same canyon a year ago for a similar purpose.

Passenger service on the Canadian Northern Railway to Vancouver was inaugurated recently It is a 34-hour trip, and a 60-hour freight service has been announced. This gives the northern part of the producing area of Alberta and Saskatchewan a similar advantage of direct rail connection with the coast cities, as the southern area has enjoyed for the past quarter century.

Plans which have been prepared in the office of Fred L. Townley, 325 Homer Street, for Great Northern Station to be erected in this city, have been approved and construction work will start shortly.

Cuba

Quintana, Matanzas Province—R. J. Leonhardt, who for sometime past has been operating Bucyrus draglines for the Natomas Consolidated of California and is now in the employ of the Bucyrus Company, is at present here erecting a class-14-B Bucyrus dragline excavator for Champion Company. At the present time there is a large dragline job going on which in fact has been in progress for the last five years. The work is the digging of canals for the draining of flood lands in the sugar cane belt, a government proposition. They have in operation, beside the new dragline excavator, a class-20 and class-24 Bucyrus dragline a 15-inch suction dredge and two clam shell excavators, one for land work and the other mounted in a float. The material is very hard, being 65% rock, a red adobe which is very hard on teeth. Beside the above equipment, they have an Ingersoll-Rand compressor and some Jackhamer drills. Mr. Leonhardt says that the climate is delightful and the fruit delicious.

Florida

Jacksonville—Contract has been awarded by the Florida East Coast Ry. to J. M. Cook, Jacksonville, Fla., to grade an extension of its Okeechobee division northward from Maytown to a connection with the main line at New Smyrna, Fla., about 17½ miles. The bridge construction and track laying will be done by the railroad company's forces.

Illinois

Chicago and Vicinity

By Forrest Fordham

Al. C. Duesing and Miss R. C. Padgett were married in Cleveland, December 11th, 1915. They stopped in Chicago for a day on their way to Beaver, where they expect to be with Mr. Duesing's parents for a short vacation. Al Duesing is well known to the dragline fraternity and we wish him all success and prosperity.

H. S. Munroe, superintendent of the U. S. Portland Cement Co., Concrete, Colo., spent a few days in Chicago and vicinity recently looking over cement plants and purchasing machinery for next season's operation.

Mr. Martin Ericksson, an engineer with Aktiebolaget Jarnvagsmateriel, Stockholm, who represent the Bucyrus Company in Sweden, has been making an extensive trip through the United States looking over contractors' equipment. He spent two days in Chicago recently at which time we showed him a number of different Bucyrus machines operating in this vicinity.

R. S. Walker, engineer with M. A. Hanna & Co., whose headquarters are in Duluth, spent a day with us in Chicago recently on his way to Cleveland. Mr. Walker is very busy getting his equipment in shape for next season's output.

A. W. Riney who had charge for Yale & Reagan on their contract near Gilman, Montana, on the Sun River Reclamation Project, has completed the work and is now in Chicago. This was a big project and was unusual in that all machinery used on the work had to be electrically operated. Yale & Reagan did their contract with a class-24 electric Bucyrus dragline which started to work in March 1914.

Pearl—The Chapman & Herman Company are working their class-9½ dragline excavator on a 40,000 cubic yard municipal ditch job here. The contract is in connection with a flood prevention proposition in the bed of an old creek through the center of a town. Both Messrs Chapman and Herman are on the job at Pearl. Both these gentlemen have been running the machine themselves. They have been working double shift.

On the 10th of December they completed a 40,000 cubic yard ditch job on the Big Swan Levee District, 40 to 50 miles southwest of Springfield and about 15 miles from Pearl. This work was through a slough which was an old river bottom. The material was so soft that despite the fact that their dragline was equipped with caterpillars, it was necessary to work on platforms, 7 feet square. The ditch had a 7-foot bottom a 1½ to 1 slope and was 30 feet in width. According to the engineer, for 7 days they averaged 2,000 cubic yards in 24 hours.

Lockport and Vicinity

By Geo. T. Dowse

C. U. Freund, chief engineer of the Illinois-Michigan Canal with a party of surveyors are at work surveying along the line of the Illinois-Michigan Canal between Lockport and Chicago on the line of the old canal. This is in the interest of the $5,000,000 deep waterway between Lockport and Utica, Ill. Work on

this will probably commence in the early spring. Mr. Freund's headquarters are at the canal office at Lockport.

A. C. Upper who has been at Forest, Ill. on the Illinois Central Railroad for the past season running an Atlantic shovel, dropped in town a short time ago and fell right into a job for the winter with the Chicago Ballast Company, at their coke ovens at Joliet. Lucky critter, that Art!

The Illinois Stone Company at Lemont have shut down their stone quarry for the winter after a very successful season in the crushed stone business. So says Superintendent Lindsay.

The Great Lakes Dredge & Dock Company closed their quarry No. 1 for the season on the 20th of December on account of the cold weather.

J. G. Beck of St. Catharines, Ont. dropped in on his relations and friends during the early part of December. John says he is rolling around the country in order to take off a little flesh.

Iowa

Sioux City—Frank Wilkinson on about the 5th of December, completed the erection of an 18-B Bucyrus revolving shovel here for L. G. Everist, Inc.

Kansas

Pittsburg and Vicinity

By W. S. Russell

The weather has been moderately cool during the past month with but little rain which has been favorable for coal stripping operations which has enabled the steam shovel plants to fill their orders. Colder weather is now anticipated which will keep them all busy and running full capacity.

The market is brisk with a good demand and we quote prices as follows:—Lump per ton $2.25, Nut per ton $2.00, Mine run per ton $2.00, Mill run per ton $1.75, Slack per ton $1.35 F. O. B. railroad cars at the mines.

We regret to note the death of John N. Hodges a prominent coal operator of Pittsburg and one of the principal stockholders of the Pittsburg & Midway Coal Mining Company, having formerly been for years, its general manager. Mr. Hodges came to Pittsburg in 1873 when it was but a village and has been closely identified with it in various ways ever since. After the death of his wife he lived at the Stilwell Hotel for about twenty years and had a large circle of friends and acquaintances.

During the past year the sale of steam shovels in the Kansas field has been very active. Thirteen coal stripping shovels were purchased during the year in this district, ten of the Bucyrus and three of the Marion type. It is interesting to observe that there seems to be a strong tendency toward the use of the heavier shovels. All but one of the Bucyrus shovels purchased were of the largest type, weighing over 300 tons each. They are listed below—

The J. R. Crowe Coal and Mining Company, two 225-B steam shovels, 6-yard dippers.

The Oklahoma Mining and Stripping Company of Lehigh, Okla., one 225-B steam shovel, 6-yard dipper.

The Pittsburg and Midway Coal Mining Company, one 225-B steam shovel, 7-yard dipper.

The Sherwood-Lester Coal Company of Liberal, Mo., one 225-B steam shovel, 6-yard dipper.

The Barton Ridge Coal Company of Liberal, Mo., one 225-B steam shovel, 6-yard dipper.

The Roy-Millner Coal Company of Weir City, Kansas, one 225-B steam shovel, 7-yard dipper.

The Clemens Coal Company of Pittsburg, Kansas, one 225-B steam shovel, 7-yard dipper.

The Domestic Fuel Company of Pittsburg, Kansas, one 225-B steam shovel, 7-yard dipper.

The Pittsburg-Scammon Coal Company, Pittsburg, one 175-B steam shovel, 3½-yard dipper.

The class 225-B Bucyrus steam shovel operated by the Alko-Nak Coal Mining Company at Henryetta, Okla. is working every day, stripping a vein of coal about 3 feet thick and of excellent quality, having no hornbacks to contend with. This steam shovel weighs over 300 tons, is fitted with an 80-foot boom carrying a 6-yard dipper and having a capacity to handle 5,000 cubic yards of ordinary earth or shale stripping per day of nine hours.

H. N. Taylor, vice-president, Central Coal & Coke Company, was in Pittsburg a few days last month.

Stuart Crowe, manager of the J. R. Crowe Coal Mining Company of Kansas City, spent several days in Pittsburg last month.

W. W. Millner of the Roy-Millner Coal Company, Weir City, made a trip to Chicago last month and purchased a 225-B Bucyrus, steam shovel, one of the largest built, having an 80-foot boom, a 7-yard dipper and weighing over 300 tons requiring 12 car loads to transport it. The shovel is now being erected near Fuller, Kansas on the K. C. S. R. R.

Ira Clemens, Chas. M. Sweeny and Geo. W. Mockie were on a short business trip to Chicago last month.

Lee Bigby, superintendent Moka Coal Company of Mulberry, spent a few days in Pittsburg last month. He is operating two Bucyrus steam shovels stripping coal.

There are good opportunities for having means to engage in coal stripping in the Kansas field. Strip coal land can be bought or leased at reasonable prices and there is good money in the business. Further information will be furnished by addressing W. S. Russell, Stilwell Hotel, Pittsburg, Kansas.

The Bucyrus Company have a stock of repairs for their Coal stripping steam shovels at W. L. Sullivan store room on 7th Street between Broadway and Locust Streets, which is a great convenience to owners of Bucyrus steam shovels.

Minnesota

Notes from the Twin Cities

Clapp-Norstrom & Riley, St. Paul

We received a few days ago a letter from our friend, W. F. Carey, dated Shanghai, China, November 22nd. This letter was, of course, not written for publication, but I am sure W. F. Carey would not object to his many friends hearing from him.

"We are leaving Shanghai today and there are many things to attend to without any too much time, so will write you only a short letter, giving you a general idea of our trip from San Francisco across the Pacific.

To begin with, our day in Honolulu was one never to be forgotten. It was a great surprise to me. Some of the hills were covered with pines, palms and enormous, beautiful tropical trees and plants. Others were a veritable bed of cactae, great stretches of land covered with sugar cane, rice, pineapple and other products; on the whole, arranged in such a manner as to be highly picturesque. The quantities and varieties of flowers and beautiful lawns cannot be equalled even in southern California. I think the Island must be a close second to the original Garden of Eden.

We visited the famous cliff known as Pali, over which several hundred years ago, an Hawaiian brave and his troops, drove the enemy from a nearby island, and gloated over the many corpses which were strewn at the bottom of the precipice. I don't believe the chieftain deserved any great credit for driving them over the cliff, however, for the day we were there the wind blew a gale that could well have done the work without any assistance; in fact,

it was almost impossible to keep your footing, and they say it is usually that way.

Of course, we visited the famous Aquarium there and such odd and wonderfully beautiful fish, I never saw. They were every conceivable shape and color, and you can imagine the delight they gave the youngsters. But even greater was their pleasure in going bathing. The water at Waikiki Beach is almost too warm to be pleasant and there is no undertow, so it is exceptionally safe.

We reached Yokohama eight days after leaving Honolulu. The time sped very quickly, however, as there was of much going on aboard the ship, with baseball, shuffleboard and the usual number of games, besides which, there was a swinming tank on board. Early in the trip, a meeting was held of all the gentlemen on board, resulting in Mr. Carey being appointed Chairman of the Committee for Entertainment, and he and his committeemen, arranged entertainment of some kind for every evening. With almost a thousand people on board, it was easy to find talent and some very clever entertainments were given, chief of which was a Minstrel Show, in which Mr. Carey figured as one of the end men. (Don't say I told you, but everyone said he was the "star performer" of the evening).

We were fortunate in being in Japan for the Coronation of the present Emperor. Of course, there was great rejoicing all over Japan and the streets were gaily decorated with beautiful banners of gold and silver cloth and hundreds and thousands of pretty white and red Japanese lanterns. The decorations were truly beautiful. We stopped in Kobe, Yokohama, Kyoto and Nagasaki. Kyoto was the capital city of Japan until about fifty years ago, and there for 1000 years, an unbroken line of Emperors have lived and ruled. Kyoto (a city of about a million inhabitants) was gorgeously decorated. The parade of Japanese and foreign dignitaries from the Emperor's Palace at the end of the ceremony, in which his Royal Majesty announced to his ancestors that he had assumed the duties of Emperor of Japan, was a beautiful and impressive sight. It was quite a privilege to be there on that occasion.

That night, our party, consisting of twelve adults, each carrying lighted Japanese lanterns, took rickshaws and went through the streets and shouted "Banzai", which means "Long live the Emperor". Thousands of people thronged the streets but they were as quiet as a model sunday school. Everyone seemed greatly amused at our noise, but few even ventured an answering cheer for the Emperor. Such an event in the States, would have been the occasion for marked hilarity, but not so in Japan. They are a most decorus people.

On the whole, we came away feeling that Japan was a fascinating place, but there was something about it which impressed you with its lack of substantiality and you felt that you would be glad to reach China, which is so huge, and where at least, could be nothing of that feeling.

The trip over from Nagasaki was only two days and the weather being fine, it was most enjoyable. We are quartered in a pleasant hotel, which, I must say, seems decidedly European. We can hardly make ourselves believe we are in China, just yet, as there is such an immense foreign population and the buildings in this section all look so much like they do at home, it takes a trip in a rickshaw through the Chinese section, to make one realize this is really China. Will write you more later on as regards my impression of China, but having seen so little of it, could not venture much of an opinion now. Expect to reach Peking on Wednesday and we will all be glad to unpack our trunks with a feeling that we are at home for at least a few months."

St. Paul—It looks now as though there would be considerable delay in beginning active construction on the new union station development at St. Paul, Minn. The St. Paul Union Depot Co. has withdrawn the plans filed with the city officials and is preparing new ones. As first proposed the improvement called for changes in the channel of the Mississippi River involving a large amount of excavation and the construction of concrete retaining walls and a levee. Bids on this portion of the work were taken, but were rejected because of objections raised by the War Department to the proposed change of harbor lines. It is stated that the company is now preparing plans that will require no change in the harbor line.

Missouri

St. Louis—Geo. W. Pew has recently completed the erection of a 14-B Bucyrus revolving shovel for the Webb-Kunze Construction Company, here. Phillip Rouse started to erect this machine, but was obliged to return home on account of sickness.

Nebraska

Omaha—The Phelan-Shirley Company of Omaha have a contract amounting to 1,113,000 cubic yards for river straightening in Warren County, Iowa. They are using class-14 and class-20 Bucyrus dragline excavators on this work. The work is for the South River Drainage District No. 2 under the direction of A. S. Van Sandt, engineer of the District, Clarinda, Iowa. It is expected that this job will be completed about November 1st, 1916.

New York

New York Notes

By H. Grey

Jack Dorgan dropped in the office today from Englewood, New Jersey where he has been running an 18-B Bucyrus for Edward English, he having shut down his work for the winter on the excavation of a large college there.

Robert Ballinger was in town recently having lately finished work on the Pierson Engineering Company's 18-B Bucyrus shovel at Collinsville, Conn. They have shut down for the winter on their Hartford reservoir contract.

New York—The Public Service Commission for the First District awarded the following contracts on rapid transit lines in New York City: For the construction of Section No. 2 of Routes Nos. 19 and 22, the Westchester Avenue portion of the Southern Boulevard and Westchester Avenue extension of the Lexington Avenue subway, to Lawrence C. Manuell, for $2,063,877. This section is a three-track elevated railroad, and extends northerly from Whitlock Avenue to Pelham Bay Park. For the supply of Special Work, Order No. 6, consisting of frogs and switches which are to be used in the track-laying of the Lexington Avenue subway, to the Ramapo Iron Works, at $46,195. For the installation of tracks on the White Plains Road extension of the Lenox Avenue branch of the existing subway, to the Coast and Lake Contracting Corporation, the lowest bidders, at $53,930.

New York—Bids for the construction of Section No. 3 of Route No. 8, comprising the tunnel under the East River for the 14th Street-Eastern Rapid Transit Railroad, have been opened by the Public Service Commission for the First District. The lowest bidder was Booth & Flinn, Ltd., New York City at $6,630,023.50.

Syracuse—The Syracuse Grade Crossing Commission has plans well advanced for eliminating grade crossings in this city.

Brooklyn—Chas. Rees, whose name is very familiar to shovelmen and contractors as he has been in the game since 1889, is at the present time general superintendent of the Inter Continental Construction Corporation with supervision over this company's Interborough subway contract here. A. C. Lewis is foreman in charge of dragline work. Thomas C. McVeigh is operating and John Knox, fireing the class-14 Bucyrus dragline. Thomas Knox is running and Joe Flannigan craning an Atlantic-35 and John Mannion and James McArdle are operating the 18-B Bucyrus on different shifts.

Ohio

Fostoria—J. W. Knott about the 15th of this month, completed the erection of a class-7 Bucyrus dragline excavator for G. H. Jones Company, here. This dragline is mounted on caterpillars.

Dayton—Leonard F. Burrage, Jr., formerly connected with the U. S. Reclamation Service on the construction of Arrowrock Dam, has been appointed to a position with the Miami Conservancy District, at Dayton, Ohio. Mr. Burrage was with the U. S. Reclamation Service for the past 6 years, having been engaged on the construction of the Kochess and Keechelus earth dams in Washington previous to his transfer to the Arrowrock work.

Lucasville—Geo. E. McGillivery has been operating a 100-C Bucyrus shovel for the Jones-Grey Company on the Chesepeake & Ohio Northern work, here.

Oklahoma

Henryetta—Charley Flynn early last month completed the erection of a 225-B Bucyrus revolving shovel for the Alko-Nak Coal Mining Company, here.

Oklahoma City—A. L. Cook, Ottawa, Kans., has been awarded 130 miles of bank widening for Missouri, Kansas & Texas R. R., between Oklahoma City and Atoka, Okla.

Oregon

Notes from the Northwest

By L. T. Russell, Portland

The O-W. R. & N. Company have let a contract to Twohy Brothers for changing grade and double tracking the line between Coyote Junction and Blalock.

McDougall & Son have the contract for lining the Peninsula tunnel located on the O-W. R. & N. line between Portland and Seattle and near the Portland City limits. The job amounts to about $400,000.00. Concrete will be used entirely.

The Interstate Bridge between Portland, Oregon, and Vancouver, Wash, is progressing in fine shape. Porter Brothers, who have the contract for the steel work, have assembled three of the spans and floated them into position in the last ten days by means of barges which took them from a false work where they were erected of the Vancouver shore.

We had a pleasant visit this week from Eugene Prunner, an old-time shovel operator of the northwest states.

Road construction in Oregon and Washington has been suspended for the winter because of the wet weather. This is especially true of the western part of both states.

The Suttles Lake Irrigation Project, Grandview, Oregon, has been held up because of unsatisfactory proposals for the bond issue for the work which amounts to about $60,000.00. O. Lauergaard, Railway Exchange Building, Portland, Oregon, is engineer.

Multnomah County, Oregon, will spend approximately one million dollars during 1916 on road work, a large part of which will be for paving and the betterment of existing highways.

Benson and Hauser are busy with their work of building the O-W. R. & N. extension from Riverside to Crane Creek Gap in Eastern Oregon, amounting to some thirty miles.

Mr. L. A. Nutter, representative of the Western Wheeled Scraper Company of Seattle was a caller at our Portland office last week.

Mr. F. E. Schoen and Mr. Robert Bishop of the American Hoist and Derrick Company of Seattle, were Portland visitors recently.

Panama

In compliance with a request from President Wilson, who is desirous that General Goethals have the benefit of the best assistance possible in solving the problem he has in hand, the National Academy of Science has designated a commission to investigate the subject of slides on the Panama Canal and to make a report to the President concerning them. The commission has sailed for the Canal Zone.

Those appointed on the commission are:—Charles R. Van Hise, president of the University of Wisconsin; Brig.-Gen. Henry L. Abbot, hydraulic engineer, of Cambridge, Mass.; John C. Branner, president of Leland Stanford, Jr., University; Whitman Cross, of the U. S. Geological Survey; John F. Hayford, director of the college of engineering, Northwestern University; Harry F. Reid, professor of geology at Johns Hopkins University; Dr. Charles D. Walcott, president of the Smithsonian Institute; Rolla C. Carpenter, professor of experimental engineering, Cornell University; Arthur P. Davis, chief engineer U. S. Reclamation Service, and John R. Freeman, consulting hydraulic engineer, of Providence, R. I.

Texas

Ysleta—Contracts have been awarded by U. S. Reclamation Service as follows for the Rio Grande Irrigation Project, New Mexico-Texas: To Toohey & Johnson, Phoenix, Ariz., excavation of approximately 162,000 cu. yd. earth for the Leasburg Canal and the Picache Branche Canal in vicinity of Hill, M. N., at $23,008, and to H. R. Williams, E. Paso, earthwork of San Elizario Feed Canal near Ysleta, Tex., at about $3,149, and to John Mulligan, E. Paso, earthwork on San Elizario Feed Canal, at $2.838.

Tennessee

Chilhowee—Oliver & Hill, Knoxville, Tenn., have been awarded contract for 1 1-5 miles of railroad on Bushnell extension of Southern Ry., to point in North Carolina where proposed dam of Aluminum Co. of America is to be constructed.

Oneida—Rhodes, McDowell & Baker have contract for 11-mile extension of Tennessee Ry. Line will run up new river to Big Boushy Mountain, where a connection will be made with Harriman & Northwestern Ry.

Utah

Salt Lake City—The San Pedro, Los Angeles & Salt Lake railroad has completed surveys for line from Daggett to San Bernardino. Estimated cost is $4,000,000. At present the company uses the tracks of the Santa Fe between these points, but it is known that this arrangement is not satisfactory to either company. No definite date is given for commencement of construction.

Virginia

Norfolk—The State Highway Commission rejected all bids received on Dec. 1 for constructing 14 miles of gravel roads. The work will be readvertised. G. P. Coleman, is state highway commissioner, Richmond.

UMI

Washington

Tacoma—The Oregon-Washington Railway & Navigation Co. contemplates starting at once dredging operations in the middle city waterway for the Glazier Fish Co. This work, together with a spur track along the middle waterway, will cost about $125,000.

Tacoma—Commissioners of Waterway District No. 1 probably called for bids on Jan. 1 for dredging and filling the Hylebos Creek tide flats for a distance of two miles. The work will involve over 2,000,000 cu. yds. of material and will cost between $350.000 and $400,000.

West Virginia

Chelyan—In our December number we published a note to the effect that Patton & Lapsley expected to complete their contract for the Charleston Interurban Street Railway Company's new line from Winifrede Junction to Cabin Creek Jnuction by December 1st. We have just been advised that on account of some extra work the completion of this contract was delayed until Christmas. They used thereon a 70-C Bucyrus shovel, 30 4-yard Western dump cars, two 12-ton Porter, two 14-ton Baldwin and one 12-ton Davenport locomotives. The contract called for the moving of 100,000 cubic yards and for concrete work for three creek crossings.

Wisconsin

Colby—D. E. Sullivan has just finished some shovel work at Shawano, Wisconsin for the Wisconsin & Northern Railway Company who have recently completed their line to Crandon.

PROSPECTIVE CONSTRUCTION

Alabama

Press reports state that the Alabama, Tennessee & Northern Railway has been purchased by the Illinois Central R. R. which plans to extend its line to Tuscaloosa, 30 miles. A. S. Baldwin, Chicago, Ill., Chief Engideer. Illinois Central R. R.

Bids will be received until Jan. 12 by County Commissioners Dadeville for constructing 38 miles of highway.

Surveys made by the Gulf, Florida & Alabama Railway for extension from Kimbrough north to Jasper, Ala., 158 miles. G. A. Berry, Pensacola is Chief Engineer

Arkansas

The Pine Bluff & Northern R. R. Co. is reported to have completed plans for an extension from Cullor to Pine Bluff, a distance of 53 miles. It is stated that construction will be started next year.

Surveys are under way for a narrow-gage railroad to be built from Cotter to Rush. The line will be about 14 miles long and will traverse the Buffalo River and Rush Creek mining districts. R. P. Sharp is engineer.

Road contractors will find many construction opportunities in Arkansas during the coming season. An extensive road building campaign is about to be started in the state calling for an estimated expenditure next year of over $6,311,000.

In addition to the large expenditures definitely decided upon by road improvement districts, it is probable that at least $1,000,000 worth of additional work will develop during the season. There also will be expended by the various counties from the regular three mill road tax an additional $1,500,000.

California

Surveys have been completed for a highway from Weldon northerly to the Kern County line. From this point to Mt. Whitney it is stated that construction will not be difficult. The length of the road in Kern County is 13.2 miles and the estimated cost is $50,000. Angus Crites is interested.

The Fresno Interurban R. R. Co. will during 1916 construct 18½ miles of electric railway from Fresno to Clovis and Fresno to Centerville.

It is reported here that when the Western Pacific R. R. Co. is taken from the hands of the receiver it will have means provided for the construction of branch line to cost nearly $20,000,000.

The Marin Municipal Water District, San Rafael, Cal., which sometime ago voted a $3,000,000 bond issue to acquire and develop all of the water companies in Southern Marin County, plans to commence construction work on the Alpine tunnel by Jan. 1. Bonds totaling $600,000 are now being advertised for sale; of this amount $450,000 will be used to drive the main pipe line tunnel.

Canada

The Toronto, Hamilton & Buffalo Railway Co., Hamilton, Ont. plans to build a railway between Dunville and Port Mailland. H. L. Latham, Hamilton, is chief engineer.

It is expected that the Provincial Government of Quebec will undertake the construction of an improved highway between Shawinigan Falls, Grand Mere and Three Rivers. A party, including Hon. J. A. Tessier, minister of roads, Mr. Ben Michaud, deputy minister of roads, Mr. Gabriel Henry, chief engineer of the roads department, and a number of others, have gone over the route. Five large concerns, viz., The Shawinigan Water and Power Co., The Belgo-Canadian Pulp and Paper Co., The Laurentid Pulp and Paper Co., The Canada Carbide Co., and The Northern Aluminum Co., have already invested a capital of nearly $25,000,000 in the industrial centres of Shawinigan Falls and Grand Mere. The towns are growing rapidly and they all need badly a good road to connect them with Three Rivers and Montreal and Quebec, by the way of the new Montreal-Quebec road, which is almost finished.

Colorado

President H. U. Mudge of the Denver & Rio Grande Railroad has announced an extensive construction program. The work calls for the standard gauging of 255 miles of narrow-gauge line in Colorado and New Mexico and the completing of 72 miles of new line. The new construction will extend from Southfork to

Juanita which is on the New Mexico line. Here a connection will be made with the present 3-foot gauge line to Durango. The section from Juanita to Durango, 65 miles in length, will be standard gauged. It is also proposed to standard gauge the line from Antonito to Sante Fe, New Mexico, a distance of 125 miles and the line from Monyrose to Ouray, 36 miles. Other narrow-gauge sections linking with through lines will eventually be widened.

Florida

The Circuit Court at Sanford validated the $250,000 bond issue for constructing brick roads.

Georgia

The Savannah & Atlanta Ry. Co., has applied for a charter and proposes a 60-mile line from St. Clair to Washington in Wilkes County. This is the proposed extension of the Savannah & Northwestern Ry., of which J. H. Hunter, Savannah, is president.

The Flemington, Hinesville & Western R. R. proposes to build from Hinesville to Glenville, Ga., 22 miles. It is reported that the work will be undertaken in 1916.

The Louisville & Nashville R. R. is reported to be planning to secure entrance to Atlanta by means of an extension from Carterville to Marietta.

The Lula-Homer R. R. intends during 1916 constructing 110 miles of road as follows: 15 miles Winder to Jefferson; 14 miles Jefferson to Commerce; 18 miles Commerce to Cinesville; 14 miles Cinesville to Bowerswell; 21 miles Homer to Cinesville. D. G. Ziegler, Chief Engineer, Lula.

Idaho

The U. S. Reclamation Service has decided to join the Nampa-Caldwell Irrigation District in building a drainage system to prevent further extension of seepage. Field operations will begin immediately.

Plans are being prepared by E. M. Booth, state highway engineer, Boise, for about 135 miles roads to be constructed by State.

It is reported that an election will be held to vote $150.000 bonds for constructing the Uniontown link in the State highway by the Lewiston Highway Dist.

Illinois

The Board of Trade of Alton has decided to start in Madison County a propaganda in the interest of promoting a bond issue of not less than $1,000,000, to build hard roads in the county, in connection with the State Aid fund.

Iowa

Ft. Dodge, Des Moines & Southern R. R., Boone, plans to build a railway from Swanwood Junction to Des Moines, about six miles, next year.

Kansas

The Fort Scott & Pittsburg Ry. plans to build a line from Fort Scott to Pittsburg, Kan., about 36 miles. The proposed line will connect Fort Scott, Garland, Arcadia, Mulberry, Frontenac and Pittsburg. H. A. Cooper, Redfield Building, is acting as secretary.

The Chase County Drainage District No. 1, Strong City, Kas., proposed constructing about two miles of open ditch requiring about 70,000 cu. yd. excavation, four miles from Strong City; suitable for dragline or team work; cost $10.000. Engineer, H. B. Walker, state drainage engineer, Manhattan.

Kentucky

The Kentucky Midland R. R., it is reported plans to build an extension from Summers to Dawson Springs, via Earlington, Ky., about 22 miles.

Construction of the Owingsville & Olympia R. R., of Kentucky, which was suspended for want of funds, is to be resumed. The road is to connect Owingsville, Ky., with the Chesapeake & Ohio Ry.

Louisiana

The Louisiana & Arkansas Railway plans to build an extension from Wildsville Junction to Vidalia, La., about 22.59 miles. William Buchanan, Texarkaka, Ark., is president.

Maine

The Bar Harbor & Union River Power Co. contemplates constructing an electric railway from Bluehill Falls to Brookline and Sedgwick, 14 miles. C. M. Tolman, chief engineer, Bangor.

Maryland

It is reported that the Pennsylvania R. R. has under consideration plans for entering the Curtis Bay district. It is believed that the road will either tunnel the Patapsco River from its yards at Canton or else make an agreement with the Western Maryland to use its car slip at Curtis Bay.

Mexico

When peace is finally restored in Mexico a great deal of new construction will undoubtedly be undertaken. The Carranza Government has already taken under consideration, plans for completing several thousand miles of new line. In addition, a great deal of work will be required for the restoration of the present lines to their former condition. A marked improvement has already been noted in railroad conditions in Mexico, and Mexican officials are now arranging for the resumption of sleeping car service with American cities. Alberto Peni is director general of railways for the Republic of Mexico and Antonio Peni is in charge of construction for the National Railways. Their headquarters is Mexico D. F.

Minnesota

Ditch work estimated to cost over $224,000 and requring 1,372,000 cubic yards of excavation will be placed under contract probably in February, by Koochiching County, Minn. This calls for the construction of three open ditches alongside each of which a road will be build with the excavated material. One of these ditches will be 17.74 miles long, bottom width 4½ feet. Another 60.16 miles in length, bottom width 5 feet and the third, 19.47 miles in length with a bottom width of 4 feet. The work is adopted to dragline excavators and floating dredges. E. W. Kibbey International Falls, Minn. is county engineer.

The County Commissioners legalized 16 stretches of highway which will be built in connection with the construction of County Ditch No. 4 in the Meadowland-Toivola District. The Commissioners also received for consideration a petition for improvement of the Buhl-Littlefork Highway.

The St. Paul Southern Electric Railway, St. Paul, plans to build a railway from Hastings to Rochester, 64 miles, during 1916. H. A. Genung, 1615 Pioneer Building, St. Paul, chief engineer.

About $200,000 will be spent on drainage ditches in Fairmount county. At January meeting contract will be let for three ditches. H. C. Nolte, county auditor, Fairmount.

Surveys are being made for a railway from Port Arthur to Duluth, Minn., to be known as Great Northern, Minnesota & Duluth R. R.

UMI

The Minnesota Northwestern Electric Ry. Co., Thief Falls, plans to construct 20 miles of new line during 1916.

Mississippi

The Panama Line, Pensacola and Missouri Valley R. R. Co., has been charactered with a contemplated capital stock of $22,000-000, and proposes line from point near Pensacola, Fla., to Kansas City, Mo., and Omaha, with branches to coalfields in Alabama and Arkansas. Walter D. Seaver, Pascagoula, and C. W. Lacy, Anniston, Ala., are incorporators.

About $200,000 bonds are to be dold by the Board of Supervisors Gulfport, for constructing two roads, one from Gulfport north to county line and another a beach highway the length of the county.

Missouri

Bids will be received until 2 p. m., Jan. 15, by Earl McDaniel secretary, Wyaconda River Drainage District No. 1, for 17.3 miles drainago ditch; bottom width, 16 ft.; side slopes, ½ to 1; average depth, 8.6 ft.; total yardage, 557, 000 cu. yds. C. J. Wiegner, engineer, Memphis, Mo.

Montana

Plans have been prepared for a power and irrigation project to be constructed by the Big Horn Irrigation and Power Company, providing for a dam, a 170,000-hp. hydroelectric power plant, railroad from Custer, Mont., to cost $800,000, ditches, laterals, etc. J. J. Harris, Hardin is president of the company.

New York

There is a report abroad that a plan is being considered to construct a railroad from Schnectady, New York to Bloomsburg, Pa. which would link the Boston & Maine Railroad with the coal fields of the west. It is believed that if this proposition goes through, it would not only materially increase the revenue of this railroad, but it would relieve it from its dependence upon the N. Y. Central.

Ohio

Contemplated expenditures by the Baltimore & Ohio R. R. include the following : $600,000 for double-tracking between Midland City and Cincinnati; $640,000 for second track and track elevation through Defiance.

The Wheeling & Lake Erie R. R. according to reports, will let contracts at once for the construction of a 3-mile spur to cost between $200,000 and $250,000.

The Cleveland, Alliance & Mahoning Valley R. R. Cleveland, contemplates a double-track line from Warren to Youngstown, via Niles.

Oregon

Kendall Bros. of Pittsburgh, Pa., have announced that they will start construction of Roseburg & Eastern railroad about February 1, if rights-of-way can be secured by that time.

Bids will be received until Jan. 6 by the County Court for the construction of the Butter Canyon road. Work includes about 25,000 cu. yds. of rock excavation and 4,500 cu. yds. of earth excavation. Bids are also asked for constructing another road requiring about 8,500 cu. yds. of rock excavation.

The Oregon-Washington R. R. & Navigation Co., and the Oregon Short Line R. R. will change their main line from Blalock to Coyote, Ore., 36 miles, straightening curves and lowering grades at an estimated cost of $500,000. (*See item, Notes from the Northwest.*)

The several plans are being considered for the irrigating part of the North Unit lands of the Deschutes project by storage of Crooked River. It is proposed to develop 46,000 acres of land near Haystack Butte and 9,000 acres near Prineville. State Engineer Lewis estimates that this will necessitate 50 miles of main canal and water by storage through construction of a 131-ft. dam above the town of Post.

The State Water Commission has granted a permit to James McBrien of Alturas to divert water from Pit River. An earth dam 18 feet high and 1000 feet long will be constructed.

Bids will be received until 10 a. m. January 6, by Board of Supervisors, Bakersfield, for grading and construction of pavement and culverts on road from Maricopa to Taft, 6.7 miles.

An extension of the Willamette Valley Southern railroad from Mt. Angel to Silverton is proposed.

Tennessee

The Carolina, Greenville & Northern Railway has sold bonds for a proposed railway between Bristol and Knoxville, via Kingsport, Newport and Sevierville, about 140 miles. F. A. H. Kelley, Greenville, Tenn., is chief engineer.

Surveys are being made by the Nashville, Chattanooga & St. Louis Railway for a spur to Sylvan Mills, about two miles. H. McDonald, Nashville is chief engineer.

Texas

The La Feria Mutual Canal Co., Geo. H. Byrnes, receiver, La Feria, will let contract at once for 25 miles of main and 75 miles of lateral ditches, 48-in. pump, 500-h.p. internal-combustion engine.

The contract will soon be let by the Houston, Richmond & Western Traction Co. for grading first 100 miles of line between San Antonio and Houston. A branch line will be constructed from Seguin to New Braunfels. A hydro-electric power plant will also be erected. E. Kennedy is president, Houston.

Bids will be received until Jan. 12 for improving the highway system of Grayson County. The funds immediately available for this work amount to $900,000, but it is expected to expends $1,150,000 before the undertaking is completed. Julian C. Feild & Co., 105 Feild Bldg., Denison, Tex., are the consulting engineers.

The Ogden, Logan & Idaho Ry. Co. expects to build 22 miles of new line from Ogden to Harrisville and from Hot Springs to Brigham City.

Utah

Tintic Tunnel Co. has been incorporated for $2,000,000 to construct five-mile tunnel for drainage of mines in Tintic district. Double-track electric railway be constructed in tunnel. F. C. Richmond, D. R. Beebe, S. B. Smoth, and B. D. Lyon are directors.

Washington

The Chicago, Milwaukee & St. Paul Railroad will construct a branch road from the Elk River, a distance of 12 miles, to Weippe. A main line will also be constructed down the north fork of the Clearwater from the Elk River to Lewiston.

The contract will soon be let for constructing 24 miles of road between Ritzville and Spray. Appropriation available $59,000. Wm. R. Roy is state highway commisioner at Olympia. O. J. DeSpain is county engineer, Ritzville.

It is reported that the Bellingham, Mount Baker & Spokane Railway Company, of Bellingham, intends constructing a railroad from Bellingham to the Canadian boundry line, a distance of about 400 miles.

West Virginia

The County Court of Preston County, Terra Alta, confirmed the election held in Portland District on Dec. 7 to issue $300,000 bonds to build concrete roads.

The Wyoming County Court, Pineville, has sold road bonds aggregating $550,000. It is proposed to run at once a preliminary survey for a main trunk road from Mullens to Pineville, thence to Oceana, south to Baileysville, and up to the McDowell County line at the head of Brier Creek.

Wisconsin

City budget of Milwaukee for 1916 contains an item of $300,000 for the lake shore drive.

The Highway Committee of the Milwaukee County Board of Supervisors has designated roads to be improved next year, aggregating 34 miles in length. Concrete will be used.

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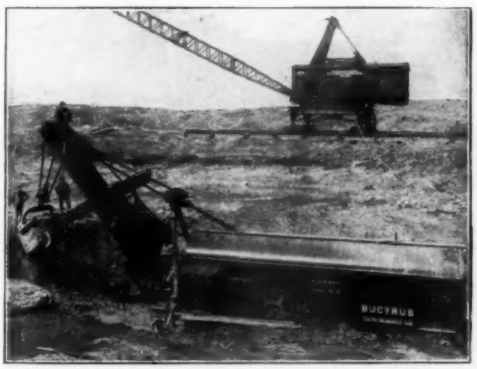

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Record No. 74 contains further particulars.

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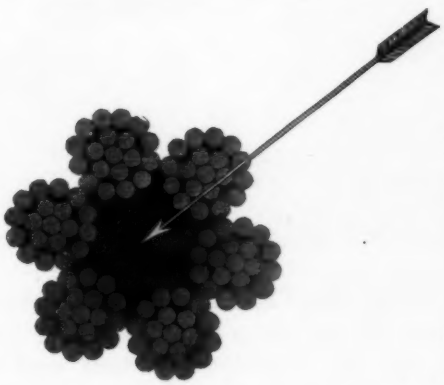

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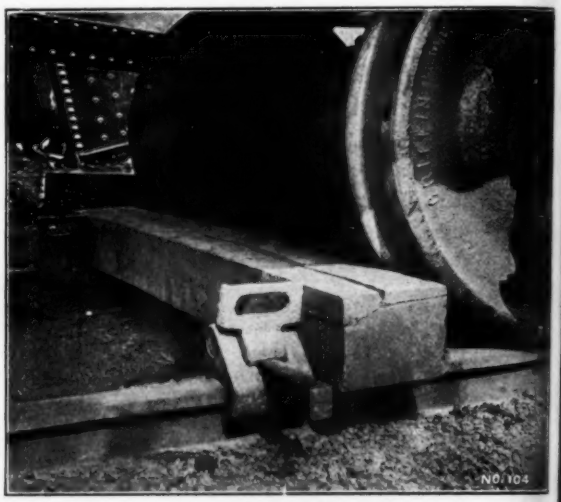

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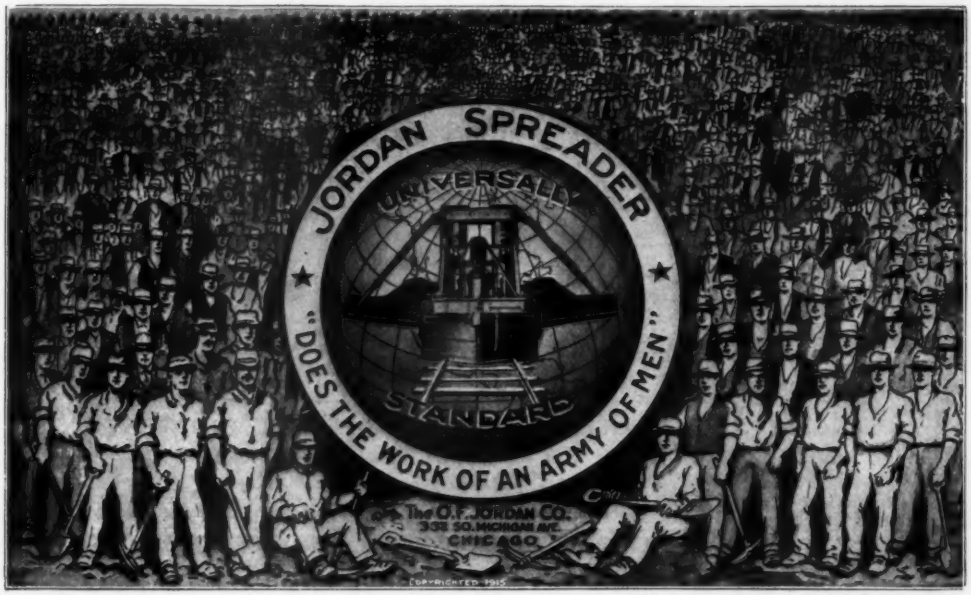

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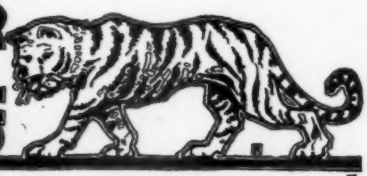

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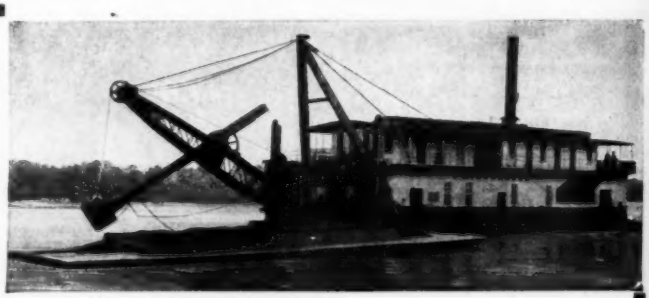

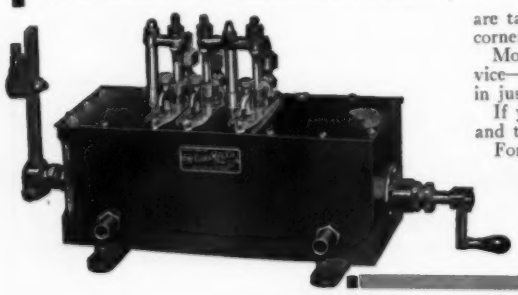

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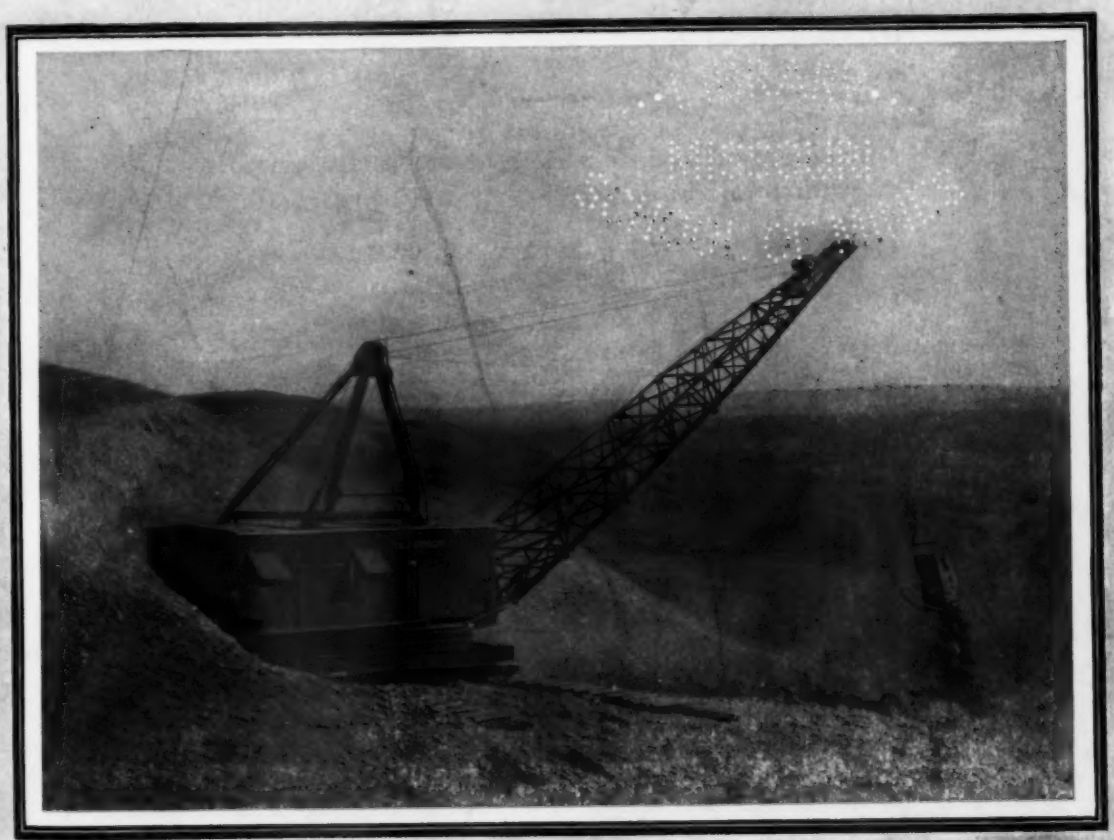

Volume 12 FEBRUARY, 1916 Number 5

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